Occidental Chemical Corporation

MEL/DOUG

September 28, 1988

Mr. Stephen D. Luftig, Director
U.S. Environmental Protection Agency
Region II, Site Compliance Branch
26 Federal Plaza
Room 747
New York, New York 10278

Attention: Mr. Mel Hauptman

Re: Hooker/RUCO Site, Hicksville, New York
Response to your July 11, 1988 Request for Information

Dear Mr. Hauptman:

Attached is the response to your request pursuant to CERCLA §104 information dated July 11, 1988 to Mr. Ray R. Irani, President, Occidental Petroleum Corporation, and to John Hanna, Esq. of Whiteman, Osterman & Hanna. The due date was extended by letter dated August 12, 1988. As Occidental Petroleum Corporation was not involved with the Hicksville Site, your letter was referred to me for response on behalf of Occidental Chemical Corporation (the "Company"), which was up to 1982 the owner of the Hicksville Site.

If you need further information, or clarification of information provided in this letter, please contact me.

Very truly yours,

T.L. Jennings

T.L. Jennings
Vice President,
Corporate Environmental Affairs

AFW037bma
Attachments

OxyChem
Corporate Environmental Affairs
Occidental Chemical Center
360 Rainbow Boulevard South, Box 728, Niagara Falls, New York 14302 716/286-3000

Occidental Chemical Corporation

CERTIFICATION OF ANSWERS TO REQUEST FOR INFORMATION

State of New York

County of Niagara

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document (response to EPA Request for Information) and all documents submitted herewith, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete, and that all documents submitted herewith are complete and authentic unless otherwise indicated. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Thomas L. Jennings

Vice-President
Corporate Environmental Affairs

Thomas L. Jennings
SIGNATURE

Sworn to before me this 28th day of September, 1988

Sandra A. Pellish
Notary Public

SANDRA A. PELLISH
NOTARY PUBLIC, State of New York
Qualified in Niagara County
My Commission Expires 8/31/89

AFW037

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RESPONSE OF OCC TO U.S. EPA
CERCLA §104 INFORMATION REQUEST
DATED JULY 11, 1988

BACKGROUND

Over the past few years, a great deal of information has been provided to the New York Department of Environmental Conservation ("NYS DEC"), other state agencies, and the U.S. EPA regarding the operations of the Hicksville Site.

Much of the early interest in the Site was caused by a concern that the Site was a contributor of chlorinated organic chemicals to the area groundwater. This concern was due in part to the reported presence of vinyl chloride in a few water wells near the Site. Since the Company was the only known user of vinyl chloride in the area, the assumption was made that the Company must be the source. It is now known that there can be many sources of vinyl chloride in groundwater.

The reality is as follows. The Hicksville Site is a small site, within and affected by, a large industrial complex. Vinyl chloride has been discovered to be a degradation product of chemicals regionally discarded in large quantities by industrial, commercial and residential users, but discarded by the Company in insignificant quantities. Vinyl chloride becomes a gas at less than 8° F and would not be expected to have reached groundwater in large quantities at the Hicksville Site.

Ubiquitous Regional Use of Solvents

A study performed in Suffolk County traced a plume of vinyl chloride in groundwater to a commercial dry cleaning establishment. The dry cleaner did not use vinyl chloride, but did use perchloroethylene (tetrachloroethylene). This solvent was converted either in the dry cleaning operation, or by biologic action in the septic system and groundwater, into vinyl chloride. The perchloroethylene, a common dry cleaning solvent, was apparently converted into trichloroethylene, then into dichloroethylenes, and finally into vinyl chloride (monochloroethylene). Trichloroethylene was itself a then commonly used metal degreaser and also could degrade to vinyl chloride. The biological degradation of tetrachloroethylene and trichloroethylene to vinyl chloride has been described in "Transformations of tetrachloroethene and trichloroethene in Microcosms and Groundwater," F. Parsons, Paul R. Wood and Jack DeMarco, J. Amer. Water Works Assoc. February, 1984 pp. 56-59. A different degradation pathway occurs when solvents are exposed to hot metal surfaces in the presence of water, such as occurs in metal degreasers. This thermal-hydrolytic

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breakdown of solvents to form vinyl chloride was described in "The Chemistry of Synthetic Resin," C. Ellis, Reinhold Publishing, N.Y., 1935, p. 1035.

Further, through studies reported by the Nassau County Department of Health in 1979 and other government agencies, we now know that a significant source of chemicals in the groundwater on Long Island was the individual consumer use of solvents in septic systems. In Nassau County alone, 76,000 gallons of solvents were introduced directly into the groundwater in 1979 in the form of cesspool cleaning and drain opening products. In a May, 1979 survey performed by Nassau County [Attachment 6], the county estimated a yearly sales volume of 76,000 gallons of organic cesspool cleaning and drain opening products. These included 17,400 gallons per year of methylene chloride; 18,600 gallons per year of 1,1,1-trichloroethane and other halogenated compounds. These chemicals were added directly to the groundwater by consumers who poured these solvents into their septic systems. The study was prompted by the discovery of chemicals in wells throughout Long Island. The study lists 11 categories of products and about 230 brands that have the potential to contaminate the groundwater.

The Company did use trichloroethylene, but differently from the typical use of this solvent. The typical use by industrial, commercial (such as automotive garages) and residential users was as a degreaser. After use, the solvent would be discarded. In contrast, the trichloroethylene used by the Company became a component of a product. [Attachment 2 at p. 228, 195] It was not discarded after use and only a trace would appear in any process waste water. Tetrachloroethylene was an integral part of the manufacturing process and it is estimated that less than 40 pounds per year of tetrachloroethylene were discharged to recharge basins [Attachment 2, p. 196]. About 50 pounds per year of vinyl chloride monomer were discharged. Even these estimates are biased on the high side because they are based on the higher production years in the late 1970's. It is unlikely that much of the vinyl chloride reached the groundwater, because it boils at 7.9 degrees Fahrenheit and becomes a gas. No chlorinated solvents other than those already discussed were discharged by the Company. [Attachment 2, p. 194 and Attachment 15]

<u>Industrial Neighborhood of Hicksville Site</u>

The Hicksville Site is a 14-acre site in the midst of a thousand acre industrial area. Its largest neighbor occupies or occupied property on three sides of the

Hicksville Site. The Industrial Chemical Survey (NYS DEC 1981) reported that this neighbor had used 1,377,457 pounds of trichloroethylene and 281,288 pounds of tetrachloroethylene annually since 1971. [Attachment 11] Nassau County estimated that the same neighbor used 53 percent of the trichloroethylene used by industry in 1978 in Nassau County. The Company's Ruco Division also used trichloroethylene, but it was incorporated in a product and not discarded. Its use, estimated at 170,000 pounds per year, had ended by mid-1975.

Site Investigations

The Company has extensively studied the Hicksville Site. This study, beginning in 1983, involved the installation of 12 monitor wells at six locations on the Site, the collection and analysis of two rounds of groundwater samples from the wells, and collection and analysis of more than 80 samples from an area at and around a 6 foot by 6 foot area where PCBs were apparently spilled. Although some trace contamination of groundwater is detectable on-site, the available data shows that trace contamination may originate to the east on the property of a Site neighbor as well as upgradient to the north from other sources. As noted this neighbor occupies or occupied property on three sides of the Site, and there is reason to believe that groundwater flows from its property, onto the Hooker/Ruco Site, then back onto the neighbor's site. Any groundwater flowing back onto the neighbor's site is presumably captured by its pumpage, and treated in its treatment systems. The maps in Attachments 9 and 10 indicate the widespread historical presence of solvents and vinyl chloride in the areas surrounding the Hicksville Site. They also appear to show a relationship between trichloroethylene and tetrachloroethylene concentrations and vinyl chloride concentrations in groundwater at some distance cross radient from the Hicksville Site.

The only significant contamination remaining on-site is PCB residues on soil in a small section of the Site. We believe adequate data is now available to define this contamination, but we have agreed to undertake more sampling as part of the RI/FS which U.S. EPA has determined must be undertaken. The Company was prepared to remediate this area in cooperation with the NYS DEC, when further action was halted by the removal of the NYS DEC as the lead agency by the U.S. EPA.

Estimates of Types and Quantities of Waste

A number of attempts have been made to estimate the types and quantities of waste produced by the Company's Hicksville plant. These efforts started in 1978 and attempted to identify the wastes produced based on then current activities and recollections of on-site personnel. Due to the passage of years, very little information is available today. Thus, this response does not attempt to calculate the number of pounds of an individual chemical which may have been disposed as trace components of wastewater discharged to on-site recharge basins decades ago. Any such calculation would be fiction.

We have, instead, attempted to provide a picture of the overall operations at the Site during the period of Company ownership. You have expressed interest in analyses of effluents which were discharged to the recharge basins. Until the mid-1970's, standard analytical procedures for the determination of specific organic compounds such as vinyl chloride and even the common solvents trichloroethylene, tetrachloroethylene and 1,1,1-trichloroethane at trace levels in water were not available. As a result, sampling results that are available are for the most part conventional parameters such as pH, total suspended solids (TSS), and biological oxygen demand (BOD). We did not believe this type of sampling result would be helpful to you and have not included such information in this response.

Also, the concentrations of Ruco chemicals historically reported in process water greatly overstate the concentrations to be found in the sumps because of the large amount of reactor rinse water and non-contact cooling water reaching the sump in addition to process waste water. This is described below in the section entitled "Water Supply". We would estimate that the comparable concentrations in the sumps would be greatly reduced by this dilution.

Answers to EPA Questions

Numbers and letters in parentheses refer to the questions in your letter. Where sufficient data is not available to respond to your questions, no response is included.

Question 1

(1.b.) The Company president is J. R. Hirl, the Chairman of the Board is R. Irani, and the Chief Executive Officer is R. Irani. Their address is Occidental Chemical

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Corporation, Occidental Tower, P.O. Box 809050, Dallas, Texas 75380. (1.c.) The Company is incorporated in New York. (1.d.) The Company has subsidiaries; however none is a significant operating company in this country and none had any relationship to the Hicksville Site. (1.d.) The Company's ultimate parent is Occidental Petroleum Corporation ("OPC"). The President is R. Irani and the Chairman and Chief Executive Officer is Dr. Armand Hammer. Their address is 10889 Wilshire Boulevard, Los Angeles, CA 90024. OPC is incorporated in Delaware. (1.e.) Both the Company and OPC accept service of process through CT Corporation.

Question 2

The Hicksville Plant Site was developed by (2.f.) Rubber Corporation of America, a small privately-held company. (2.b. and 2.c.) Operations at the Site began in 1945 and included natural rubber latex storage, concentrating and compounding. Five years later, the plant began producing small volumes of plasticizers. These activities were expanded and modified through the years. (2.d.) In 1965, a polyvinyl chloride plant was built, and was initially operated under the name Insular Chemical Corporation. This plant continued in operation until 1975. (2.a.) Hooker Chemical Company purchased Rubber Corporation of America in 1965, and operated the facility as the Ruco Division. (2.d.) Hooker has undergone several name changes, with the current name being Occidental Chemical Company. (2.b. and 2.c.) The Site was sold to employees in February 1982. Thus Occidental Chemical Company or the Rubber Corporation of America owned and operated the Site between 1945 and 1982. The Site is now operated by a privately held corporation under the name (2.f.) Ruco Chemical Corporation which is not affiliated with the Company. (2.e.) Although the Company did not lease any portion of the Site to third parties, the office building for the plant was a leased building north of the Site.

PVC (polyvinyl chloride) was a key material in the products made at the Site. Prior to 1955 this material was purchased from outside sources. In 1956, a partnership was formed with Ross & Roberts of Stratford, Connecticut to construct and operate a PVC production facility at the Hicksville Site. This joint venture was known as Insular Chemical Corporation. Insular was later dissolved when Rubber Corporation of America purchased its partner's share. Today, no distinction is made between the property which was under the control of Insular and the property which was owned by Rubber Corporation of America. The Site encompasses all of this property.

Through the years in which the Company operated the Site, various processes were employed including the manufacture of polyesters, polyurethanes, and specialty plasticizers for the vinyl industry. As mentioned above, during the period 1956 to 1975, polyvinyl chloride was produced at the Site. Other products included vinyl film and sheeting, solution polyurethanes and polyurethane latexes, dry blends and pelletized plastic compounds. A pilot plant produced polyester, plasticizer and polyurethane products, and the laboratory was utilized for organic chemical synthesis and technical service. [Abramowitz Testimony - Attachment 2]

Question 3. Processes

In the following discussion, each of the production processes is discussed separately.

(3.c) To provide an insight into the wide variety of raw materials which were used in the Hicksville processes, we have included a copy of a letter to the Nassau County Department of Health dated January 5, 1977 which includes lists of raw materials used at the Site from 1970 to 1976. [Attachment 7 - Raw Material Lists.]

(3.f) Process flow sheets are attached [Attachment 8] for monoester, polyester, polyurethane, and latex production. A similar flow sheet was not available for PVC.

Where responses are incomplete, the lack of information is primarily due to the detail requested. Due to the passage of years, little information remains on the details of production.

3.a. Latex and Latex Compounding

This process operated from 1945 to 1971. (3.c.) The process involved the co-polymerization of styrene and butadiene under pressure, in the presence of water, in a reactor with the aid of catalysts, additives, heat and agitation. The resultant product was a milky liquid, known as a latex. This latex product was sold as-is to other manufacturers for final use, or was further concentrated and modified by the Company. In the concentration process, the latex was circulated under heat and vacuum to gently remove water. Latex compounds were made by dispersing additives such as pigments and fillers into the raw latex to provide special characteristics desired by the customer. Latex is considered non-hazardous, and is used in the manufacture of surgical gloves and other rubber goods. It is also the base for the manufacture of chewing gum and is used in the manufacture of adhesives. (3.b.) Production of latex is estimated to have been about 40,000 pounds per week.

There were only two wastes from the process, one a solid and the other aqueous. The solid waste was dried latex rubber which was generated by the drying of spilled latex or by the peeling of dried latex rubber from equipment during cleaning operations. About 300 pounds per week of this waste were produced. This waste is non-hazardous and was added to the plant trash for off-site sanitary disposal. (3.j.) The liquid waste was generated from a vacuum stripping operation and from periodic flushing of equipment. The water from the vacuum stripping contained small quantities of styrene and butadiene. This water was routed to outdoor recharge basins, along with the reactor flushings. These latex wastes are regarded as harmless.

Periodically, the recharge basin bottom was scraped, and these scrapings, containing a mixture of soil and coagulated rubber, were sent off-site for landfilling. When the latex operations were closed in 1971, the recharge basin was drained.

In 1970 a 10,000 gallon outdoor storage tank of styrene (nearly full) polymerized to a solid mass. After the reaction cooled, the tank was completely solidified with polystyrene, the plastic used to make clear plastic drinking cups and the material used in making foamed plastic coffee cups. This tank was sent off-site for disposal.

3.a. Esterification

In 1950, the Company began making small quantities of monoesters (plasticizers). Polyesters were added as a product line in 1959. These were manufactured in jacketed reactors equipped with agitation and condensers. (3.c.) These esters were made by reacting organic acids, such as adipic acid with alcohols or glycols, such as octyl alcohol or ethylene glycol with the help of heat and a catalyst. Water was a by-product which was removed to allow the reaction to proceed to completion. In some products, perchloroethylene was added as an inert carrier for this water of esterification. This water was removed by vacuum distillation. The perchloroethylene and water carried over some of the reactants, such as the alcohols or glycols. In the case of plasticizer production, an excess of alcohol was used to facilitate water removal from the product. This recovered material was saved for recycling to the following batch. Over the years, trimellitate plasticizers, maleate esters, fumarate esters, and more recently, polyesters were made. Caprylates and pelargonates were also made.

Wastes from the process included both solids and liquids. Decolorizing carbon was added during plasticizer manufacturing to reduce color formation. This carbon was removed from the product by filtration through a filter press. The filter cake removed from the press was sent off-site for disposal. (3.j.) Liquid wastes, including water with dissolved organic acids, alcohols and glycols were originally sent to an outside recharge basin. From 1975 on, these wastes were incinerated on-site under permit from New York State. (3.b. and 3.d.) In 1978, at a production rate of 26 million pounds per year, the plant was incinerating about 4,000 gallons per day of waste water (around 12 million pounds per year.) This is the highest production rate experienced in any previous year. This wastewater stream contained one to ten percent of mixed glycols and alcohols. The wastewater stream also contained perchloroethylene (with an estimated discharge of about 40 pounds annually), at times methanol, and also organic acids such as adipic, trimellitic, phthalic, and isophthalic. Some of these materials have other very common uses, such as adipic acid which is an FDA approved food acidulant, and ethylene glycol which is used in anti-freeze. Non-aqueous wastes were sent off-site for disposal, either by landfilling or incineration.

(3.b.) the Company's ester production increased from small initial quantities of perhaps one million pounds in 1950 to about 26 million pounds in 1978.

3.a. Vinyl Film & Sheeting

(3.c.) In this process, PVC resin was blended with plasticizers, pigments, stabilizers and other additives prior to hot mixing and feeding to a calender. A calender is a series of large, heated metal rolls between which the molten plastic mass is fed through increasingly smaller clearances, until a film or sheet of the desired thickness is formed. The hot sheet is finally peeled from the last roll and passed over a series of cooling rolls before reaching a wind-up station. The only wastes generated in this process were scraps of plastic and floor sweepings. These harmless plastic pieces were added to the plant trash for off-site disposal. There were no liquid wastes from this process. (3.a.) The calendering operation at the Site started in 1952 and ceased operation in 1969. (3.b.) Annual production was about 7 million pounds per year.

3.a. PVC Resins

The Company manufactured PVC resins by a well known suspension process of polymerization. (3.c.) The primary raw material for this process was vinyl chloride monomer, a material which is a gas at atmospheric temperatures and pressures. Under pressure, or refrigeration below 7.9 degrees Fahrenheit, the monomer becomes a liquid. The monomer was received in rail cars, and was fed into jacketed reactors under pressure, along with water, suspending agents (soaps), buffers, and catalyst. In the agitated reactors, under pressure, and somewhat elevated temperature, the vinyl chloride was converted to polyvinyl chloride resin in a slurry with water. Whereas the monomer is a gas under atmospheric conditions, the polymer is a solid white powder. Although the process initially requires heat to start the reaction, as the reaction proceeds, cooling is required to control the temperature. This cooling was provided by circulating non-contact water through the reactor jacket. The reaction was usually allowed to proceed to 90 to 95 percent of completion, after which the unreacted monomer was stripped from the batch in a separate stripping vessel, condensed and recovered for recycling. The stripped resin slurry was then centrifuged to remove most of the water, and was finally sent through a rotary dryer to remove the remaining moisture. (3.c.) Some products required the addition of vinyl acetate to the reactor to produce a co-polymer of vinyl chloride and vinyl acetate. The basic process was similar, but vinyl acetate was added to the reaction mixture, and the catalyst and additives were adjusted.

(3.a. and 3.b) Starting in 1956, the facility operated at an average rate of 9 million pounds of product per year. The process was shut down in 1975.

Wastes from this process consisted mainly of aqueous effluent from the centrifuge and rinse water from the reactors. (3.j.) These wastes were discharged to outdoor recharge basins. (3.e.) Each year, about two million gallons of process wastewater were discharged to the recharge basins. Leaving the process, the wastewater stream probably contained 600 to 1,200 parts per million of dissolved organics. Included in the dissolved organics were trace levels of unreacted monomer. A former plant employee estimated that the total level of monomer in the wastewater was about two to three parts per million. [Attachment 1, Abramowitz letter, June 5, 1979.] Since the individual formulations varied, so did the ratio of components in the wastewater. A breakdown of contaminants based on a typical copolymer formulation may be two to three parts per million vinyl chloride, 100 to 175 parts per million gelatin, 100 to 175 parts per million methocel (a soluble form of cellulose), 50 to 100 parts per million barium-cadmium stabilizer, a trace of trichloroethylene and lauric acid, about 100 parts per million of sodium acetate/bicarbonate, and 250 to 650 parts per million of vinyl acetate. The barium and cadmium soaps were in use only for a short period of the plant operation. Only during this period would traces of these materials have been present in the wastewater. The 2 to 3 parts per million VCM is the equivalent of about 50 pounds per year. (2 million gallons x 8.33 pounds per gallon x 3 parts per million = 49.98 pounds.)

An important point is that, in addition to the 2 million gallons of process water, an equal quantity of relatively clean reactor rinse water was discharged. Also, non-contact cooling water was used. Thus, the actual concentration of materials reaching the groundwater would be much less than the above estimates for process water.

In addition to the dissolved organics the wastewater contained very finely divided particles of PVC which were too small to be captured by the centrifuge. In the recharge basins, the PVC settled out, and most of the vinyl chloride evaporated into the atmosphere due to its high volatility. About once per year, the recharge basin bottoms were scraped, and these scrapings, primarily containing PVC resins, were removed for off-site landfill disposal. The PVC operation ceased in 1975.

3.a. Polyurethanes

These products were manufactured either in 55-gallon drums or in temperature controlled reactors. (3.a.) Small scale production began in 1962. (3.c.) Raw materials were normally polyesters, a di-isocyanate, glycol-type chain extenders, and a catalyst. Solvents, such as toluene and dimethyl formamide (DMF), were added to keep the final product in a fluid condition. Temperature control was essential for product quality and uniformity, and the process took place under constant agitation. The final product was a high molecular weight polyurethane resin in solvent solution. (3.e.) Water was not used in this process other than as non-contact steam or cooling water.

Two types of liquid wastes were produced in the process. Non-halogenated solvents, such as toluene, were used periodically to flush the reactors to provide clean reactors for product changes. These flushings were sent off-site for incineration. The second type of waste was off-specification product. If the product could not meet specifications, it was sent off-site for landfill disposal.

3.a. Vinyl Compounds

Two basic types of vinyl compounds were manufactured by the Company at the Hicksville Site, dry blends and pellets. (3.c.) In either case, about 90 percent of the formulation was PVC resin, with the remainder being such additives as pigments, lubricants, heat stabilizers and impact modifiers. (3.a.) The compounding operations started in 1958. The dry blends were made by placing this mixture in a high speed blender, and mixing vigorously for a few minutes. The friction of the mixing caused a heat build-up, so the mixture would then be quickly discharged to a cooler to prevent decomposition. This product was then suitable for some uses, such as the manufacture of vinyl phonograph records. Other uses required the formation of pellets, so the dry blend was fed through an extruder, which melted the material, and forced it through a die with a rotating knife at its face to produce a pelletized product. This type of product was used for the manufacture of clear plastic bottles and blister packaging. (3.e.) Water was not used in this process.

Waste from the compounding process was mostly paper sacks in which the raw material arrived, and some floor sweepings. In the early days of plant operation, the paper bags were bundled and sent off-site along with the floor sweepings for municipal landfilling. Later, the bags were compacted and sent to a secure landfill, along with the floor sweepings. There were no liquid wastes from this process.

Question 3.g, 3.i, 3.j

It is our belief that the wastewater disposed of on-site in the recharge basins was not and is not hazardous due to either the innocuous nature of the components or the low concentration of those materials which today may be considered hazardous. Of those chemicals now listed as hazardous substances pursuant to CERCLA §101(14), only the following would have been found in the Company's waste at various times and not necessarily above reportable quantities: adipic acid, barium, cadmium, methanol, methylethylketone, phthalate esters, phthalic anhydride, polychlorobiphenyls (PCBs), styrene (but not polystyrene), tetrachloroethylene, toluene, trichloroethylene, urethane (but not polyurethane), vinyl acetate monomer (but not polyvinyl acetate), vinyl chloride monomer (but not polyvinyl chloride).

We have not included information relating to off-site disposal as the thrust of your inquiry is related to the RI/FS at the Hicksville Site which is being conducted by the Company pursuant to a Consent Order with U.S. EPA.

Reference should also be made to responses above in Question 3.

Question 4. On-site Waste Storage/Disposal

Latex solidified in three storage tanks and these tanks could no longer be used. In 1974 these tanks were removed from Plant 1 and were buried at the Site between the parking lot and the railroad right-of-way. These tanks were filled with sand and covered. The latex is not considered hazardous.

In the latex operation, latex was moved by trailer from Plant 2 to Plant 1 where it was concentrated. In time, the trailer would become encrusted internally with solid latex rubber, and the tank trailer would be discarded. In approximately 1962 a trailer was buried on the property between the Plant 2 solvent tank farm and the PVC catalyst cold room. Plant personnel believe that a second trailer was shipped off-site for disposal.

Reference should also be made to the answer to Question 6.

Question 5. Spills and Releases from Processes

In 1978 the plant was using 33,000 pounds of Speedi-Dri to soak-up and clean-up chemical spills (plasticizer, 2 - ethylhexanol and other alcohols, polyester, polyurethane, urethane latex and oil spills). Plant personnel estimated that about one-half part of organic was absorbed in each part of Speedi-Dri, thus the amount of spilled material was about 16,000 pounds per year.

Occasionally, ester plant wastes overflowed their concrete sumps (which fed the incinerator) and entered the now inactive Plant 1 Ester Plant Recharge Basin.

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For some time, the Pilot Plant hot oil system used oil containing PCBs. Periodically, the system had upsets in which oil erupted through a relief pipe, ran down the outside of the building, and soaked into the ground. This ground area was believed at the time to be about six feet square. The system was converted to non-PCB oils, and the contaminated area was paved over. This area has been studied since 1983 to define the extent of the PCB contamination. The most recent samples were taken on February 18 through March 18, 1988. The area of contamination is largely defined at this time. The most recent sampling and analysis report was presented to the U.S. EPA on June 23, 1988.

Question 6. Other Spills and Releases

The Company has had occasional spills of raw materials during transfer operations. These spills have been cleaned up, and the clean-up materials have been sent off-site for landfill disposal. One such spill in 1982 was 300 to 500 gallons of isodecyl alcohol which was spilled when a temporary transfer line broke. The spilled material was soaked up with Speedi-Dri and visibly contaminated dirt was removed. Spills such as this were reported to Nassau County as well as the NYS DEC.

Over the period that the ester plant was operating, the bulk truck loading and unloading operations resulted in minor dripping and minor leakage of plasticizer, alcohols, and latex in the ester tank farm area. There were also occasional tank overflows. The area used for the loading/unloading was neither paved nor diked. As a result, the spills could soak into the ground, and under storm conditions, the spills could be washed to the back recharge basin.

Similarly, the area to the west rear of Plant 1 where plasticizer trucks were loaded would have received minor drippings and spillage. This area was not paved, and during storm conditions would have been a source of plasticizer to the back recharge basins.

For a period of time, several hundred drums of wastes were stored on-site in areas both north and south of Plant 2. These were stored until arrangements were made for appropriate off-site disposal. The drums contained such waste as 2-ethyl hexanol, other alcohols, perchloroethylene, solution urethane, solvents such as dimethyl formamide, toluene, methyl ethyl ketone, isopropyl alcohol, waste plasticizer, waste polyester, and filter cakes. Due the

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long storage time, some of the drums rusted through, allowing the contents to be released to the ground. The drums were removed and sent for disposal off-site. Soil contamination remaining may have resulted in stormwater contamination. This stormwater would discharge to the Pilot Plant Recharge Basin.

Question 7. Pilot Plant & Laboratory Processes

The laboratory was used for a wide variety of process research and quality control functions associated with the plant operations. Wastes and effluents from the laboratory were minimal.

Laboratory and pilot plant synthesis processes and the chemicals they emloyed were essentially small scale versions of the plant manufacturing operations. There was a pilot scale hot oil system in the Pilot Plant. Periodically this system had upsets in which PCBs were released. This is discussed in the answer to Question 5.

Question 8. Storage Tank Leak Tests

On review of our files, we could find no information regarding tank leak tests. A listing of all storage tanks, capacities, materials stored in each tank, and how they are handled was submitted to the Nassau County Department of Health as part of the Site Spill Control Plan. [Attachment 3-Letter: P.B. DeVries to Nassau County Department of Health, April 29, 1981.]

Question 9. Lagoons/Septic Tanks

Although no septic tanks are in use at the Site today, at the time of Company ownership, there were five septic tanks in use. These septic tanks were used only for sanitary wastes. They were permitted to discharge a total of 4,000 gallons per day to the groundwater. [Attachment 4 - 1981 Underground Injection Control Questionaire.] There were and are no lagoons on the Site. References should be made to Question 13 relating to recharge basins.

Question 10. Water Supply

Originally, the Company water supply was primarily from on-site wells. These wells have now been shut down, and water is supplied from City mains. Company pumpage during the period January 1960 to January 1969 (a period for which records were available) averaged about 95,000 gallons per day. In 1958, these wells were permitted to pump 600,000 gallons per day, with a maximum of 120 million gallons in one year. In 1960, the pumpage was about 330,000 gallons per day. As the wells were taken out of service, this dwindled to about 35,000 gallons per day in 1968. One by one, the wells were shut down because of clogging from a build-up of naturally occurring iron bacteria. These wells were N5368 installed in May, 1955; and well N3450 installed in March of 1950, rebuilt in October, 1955 and shut down in July, 1960; and N5390 installed in October 1955 and shut down in June 1965. Occasional well use continued until October 1970, however. [Logs of these wells are included as Attachment 5.]

Question 11. Plan of Site

The U.S. EPA and their contractor, EBASCO, have been provided with drawings of the Site.

Question 12. Production and Monitoring Wells

The original water supply for the Site was primarily from on-site wells. These wells were N5368 installed in May, 1955; and well N3450 installed in March, 1950 and rebuilt in October 1955; and N5390, installed in October 1955. [Logs of these wells are included as Attachment 5.] Company pumpage during the period January 1960 to January 1969 (a period for which records were available) averaged about 95,000 gallons per day. In a 1964 form submitted to the Nassau County Department of Health, the pumpage was estimated to be from 68,400 to 102,600 gallons per day [Attachment 14]. In 1958 these wells were permitted to withdraw 600,000 gallons per day. These wells were in operation at various rates of withdrawal from 1950 to 1970. After this time they were shut down because of clogging from a build-up of naturally occurring iron bacteria.

Twelve monitoring wells were installed in two well clusters at six locations on the Site in 1983. Well logs and construction details have been provided to the U.S. EPA. The first set of groundwater samples were obtained from January 30 to February 7, 1984. A second set of groundwater samples were obtained during the period from May 6 to May 10, 1985. The results of this sampling and analysis were reported in a February 1986 report entitled "Report of Groundwater & Soils Investigation at The Former Ruco Division Plant Site, Hicksville, New York. This report has been given to the U.S. EPA.

Question 13. Recharge Basins

During the early days of plant operations, recharge basins were used for the treatment/disposal of all plant effluents, including PVC production effluents, effluents from the latex operation, and effluents from ester manufacturing. These discharges took place under New York SPDES Permit. The latex operation ceased in 1971, at which time its basin was drained and cleaned out. The on-site incinerator for ester wastes came online in early 1975, eliminating the discharge of ester wastewater to the ground. Following the PVC process shutdown in 1975, the recharge basins received only stormwater. Each of these is described further below.

You have expressed interest in analyses of effluents which were discharged to the recharge basins. Until the mid 1970s, standard analytical procedures for the determination of specific organic compounds such as vinyl chloride and even the common solvents trichloroethylene, tetrachloroethylene (perchloroethylene) and 1,1,1-trichloroethane were not available. As a result, sampling results that are available are for the most part conventional parameters such as pH, total suspended solids (TSS), and biological oxygen demand (BOD). We did not believe this type of sampling result would be helpful to you, and have not included such information in this response.

PVC, Vinyl Chloride/Vinyl Acetate Copolymer, and Latex Recharge Basins - Plant 2:

In 1956, the Company went on-stream with a PVC resin facility making both PVC (polyvinyl chloride) and vinyl chloride/vinyl acetate copolmyer. Production rate of this suspension plant was about 10 million pounds per year. Approximately two million gallons of process wastewater were discharged annually to the Plant 2 Recharge Basins. This wastewater contained about 0.1 percent PVC resin solids (too fine to be collected by the process centrifuge), and contained 600 to 1,200 parts per million dissolved organics. Included in the dissolved organics were trace levels of unreacted monomer. A former plant employee estimates that the total level of monomer in the wastewater was about two to three parts per million. [Attachment 1] This is the equivalent of about 50 pounds of vinyl chloride per year. Since the individual formulations varied, so did the ratio of components in the wastewater. A breakdown of contaminants based on a typical copolymer formulation may be two to three parts per million vinyl chloride, 100 to 175 parts per million gelatin, 100 to 175 parts per million barium-cadmium stabilizer, a trace of trichloroethylene and lauric acid, about 100 parts per million of sodium acetate/bicarbonate, and 250 to 650 parts per million of vinyl acetate. The barium and cadmium soaps were in use only for a short period of the plant operation. Only during this period, would traces of these materials have been present in the wastewater. After approximately five production batches, the reactors needed to be entered and manually cleaned due to the build-up of product on the walls. Before and after this cleaning the reactors were rinsed. The amount of this rinse water was about 2 million gallons per year and would dilute the concentrations described above upon entering the recharge basins. This water was sent to the Plant 2 recharge basins.

In addition, recharge basins for Plant 2 received wastewater from a vacuum stripping operation used in latex processing between 1956 and 1975. The wastewater probably contained some styrene and lesser amounts of butadiene. Also, rosin acid soaps may have entered the recharge basins during plant upsets.

Ester Plant Recharge Basin - Plant 1:

From 1951 to 1974, process waste from ester production was fed to the Ester Plant Recharge Basin. The ester production gradually increased from five million pounds per year in 1951 to 26 million pounds per year in 1978. In 1978, about 4,000 gallons per day of wastewater were being produced (about 12 million pounds per year). Based on an approximate two percent organic content, the plant in 1978 was disposing of about 250,000 pounds per year of organic waste, which formerly entered the recharge basin. Since 1975, these wastes have been incinerated in an on-site incinerator, and the recharge basin was taken out of service. The basin continued to receive discharges to the floor drains in the Pilot Plant, however. The discharges to the floor drains were apparently stopped late in 1976.

The wastewater that at one time entered the basin contained one to ten percent mixed glycols and alcohols. It also contained organic acids such as adipic, trimellitic, phthalic, and isophthalic. The waste stream also contained small amounts of perchloroethylene and, at times, methanol.

Cooling Tower/Boiler Blowdown and Other Recharged Water:

HRC 001 1334

The plant discharged substantial quantities of water other than process water. In 1978, about 10,800 gallons per day (3,600,000 gallons per year) of cooling tower and boiler blowdown were discharged to the Pilot Plant Recharge Basin. The design flow of these non-contact discharge was listed as 25,000 gallons per day in the May 8, 1975 SPDES application. [Attachment 12] In a July 29, 1977 Nassau County Department of Health Memorandum the cooling tower and boiler blowdown are listed as 10,000 gallons per day each. [Attachment 13] These blowdowns contained low levels of approved boiler and cooling tower treatment chemicals. Before the installation of the cooling tower, much more water was used. As noted previously, the plant was permitted to pump 600,000 gallons per day in 1958, and actual pumpage in 1960 was about 330,000 gallons per day. Most of this water was non-contact cooling water discharged to the recharge basins.

During the period 1956 to 1975, City water was demineralized for use in the Plant 2 PVC and latex processes. Regeneration acids and caustic were discharged to the basin behind Plant 2.

<u>Question 14. Recharge Basin Cleanout</u>

The above discussed recharge basins required periodic cleanout. The materials cleaned from the basins were sent to off-site landfills for disposal. The Plant 2 and Plant 1 basins were cleaned approximately once per year. This material consisted primarily of sand and gravel with resin.

<u>Question 15. Non-insurance Indemnification</u>

There is no non-insurance indemnification.

<u>Question 16. Insurance Indemnification</u>

Occidental has maintained a series of liability insurance programs over the years which would be responsive to its liability at the Hicksville Site, if any. Each such successive insurance programs involved a number of primary and excess coverage layers. The extent of such coverage's responsibility for environmental liabilities, including at Hicksville, is in litigation (<u>Occidental Chemical Corporation, et.al</u> v. <u>Hartford Accident and Indemnity Company, et. al</u>, N.Y. Sup. Ct., Erie Co.) Index No. 41009-80).

HRC 001 1335

Attachments

1. Letter Raymond J. Abramowitz, June 5, 1979.

2. Statement of Raymond J. Abramowitz before the House of Commerce Committee Subcommittee on Legislative Oversite.

3. Letter: P.B. DeVries to Nassau County Department of Health, April 29, 1981.

4. 1981 Underground Injection Control Questionnaire.

5. Production Well Logs,

6. Report on Survey of Consumer Products Containing or Suspected of Containing Harmful Organic Chemicals and Having the Potential of Contaminating the Groundwater of Nassau County, New York; May 1979; Nassau County Department of Health.

7. Raw Material Lists.

8. Process Flow Sheets.

9. Map: Maximum Concentrations of 1,2 Dichloroethylene, 1,1,2 Trichloroethylene and Tetrachloroethylene adjacent to the Hicksville Site for the period November 1975 to August 1983.

10. Map: Maximum concentrations of vinyl chloride adjacent to the Hicksville Site for the period November 1975 to April 1977.

11. Industrial Chemical Survey (NYS DEC) Submission dated June 8, 1981.

12. 5/8/75 SPDES Application.

13. Nassau County Department of Health Memorandum 7/29/77.

14. Industrial Water Use and Wastewater Disposal Practices Survey 7/21/64.

15. Memorandum from R.J. Abramowitz to Michael Whiteman - June 28, 1979 regarding use of chemicals.

DEX (Phone: 202-828-1200)

hooker RUCO DIVISION

P. O. BOX 456, RIVER ROAD, BURLINGTON, NEW JERSEY 08016, PHONE (609) 499-2300

June 5, 1979

Wald, Harkrader & Ross
1320 19th St.,
N.W.
Washington, D.C. 20036

Attn: Keith Watson, Esq.

Dear Keith,

We agreed to estimate, for the Sub-Committee, the components in the PVC waste water totaling 600-1200 ppm, as mentioned on p. 11 of the J.B. Harrison document dated 8-18-78. Our best breakdown based on a typical copolymer formulation is as follows:

	PPM
vinyl chloride	2-3
gelatin	100-175
methocel	100-175
barium-cadmium stabilizer	50-100
trichloroethylene	trace
lauric acid	trace
sodium acetate/bicarbonate	100
vinyl acetate	250-650
approx. total range	600-1200

Yours truly,
HOOKER CHEMICAL COMPANY

Raymond J. Abramowitz
Technical Director

RJA:bb
cc: J. B. Harrison
M. Whitehead
J. Ruffing

HRC 001 1338

JUN 8 1979

TESTIMONY OF RAYMOND J. ABRAMOWITZ, TECHNICAL DIRECTOR, RUCO DIVISION, HOOKER CHEMICAL COMPANY

Mr. Abramowitz. Chairman Eckhardt, Congressman Lent, members of the subcommittee staff, good afternoon. I guess we are last but not least, Hooker Chemical.

My name is Raymond J. Abramowitz. I am Technical Director of the Ruco Division, which is a part of the plastics group of Hooker Chemical Company. In my position as Technical Director, I have divisional environmental coordination responsibilities for Hooker's facilities in Hicksville, Long Island and Burlington, New Jersey. Although my office is presently located at the Burlington plant, I spent 23 years working at the Hicksville facility.

I appreciate the opportunity to appear before the subcommittee and to discuss Long Island groundwater contamination problems that are of mutual concern to Hooker and the subcommittee's members. Although the principal focus of my remarks will be upon Hooker waste management activities at Hicksville, it may be useful to first briefly describe the history and current operations of our Hicksville plant.

The Hicksville plant site was developed by the Rubber Corporation of America, a small privately-held company. Operations began as far back as 1945. Those initial operations included natural rubber latex storage, concentrating and compounding. Five years later, the plant began producing small volumes of plasticizers. Through the years, these activities were expanded, new product lines were added, and a few lines were discontinued or transferred to other plant sites. For example, in 1956, a polyvinyl chloride plant began operations which continued until 1975. I will return to a detailed discussion of our PVC operations in a few moments.

The Hicksville plant is now owned by Hooker Chemical, which purchased it from the Rubber Corporation of America in 1965. Today, the facility employs 125 individuals and annually manufactures nearly 50 million pounds of plastic products. These products and operations include the following:

One, we make polyesters for polyurethanes and specialty plasticizers for the vinyl industry. These products eventually become part of wire and cable insulation, panty-hose, shoe soles and numerous other consumer products.

Two, solution polyurethanes and a recently-developed line of polyurethane latexes.

Three, dryblends and pelletized plastic compounds for pipe fittings, bottles, vinyl records and specialty extrusion and injection molding compounds.

Four, polyester, plasticizer and polyurethane products which are in a pilot plant development mode.

And, lastly, we do have an organic synthesis laboratory which also performs technical service functions.

With this background, I would like to address the subject of today's hearing: groundwater contamination on Long Island. We have been concerned about reports of the presence of vinyl chloride and chlorinated hydrocarbons in Long Island groundwater and equally concerned with allegations associating our Hicksville facility with this problem. To set the record straight, I will explain the nature and disposition of our vinyl chloride and chlorinated hydrocarbon wastes.

Polyvinyl chloride - or PVC, as it is more commonly known - was manufactured at our Hicksville plant from 1956 to 1975. During the 19-year period, production never reached name-plate capacity of the plant, and the average annual output was approximately eight million pounds per year - that is, of polyvinyl chloride.

In the suspension PVC process used at our Hicksville facility and by other leading manufacturers, vinyl chloride monomer was purchased in rail cars as a liquid under pressure, and was received into above-ground storage tanks. This monomer, under pressure with water, was charged to a reactor along with catalysts and other minor additives and converted to polyvinyl chloride by polymerization.

Unreacted monomer at the end of the reaction was steam-stripped from the batch with vacuum, was condensed and recovered for recycling in subsequent runs. The batch at this stage was essentially a slurry of granules of polymer in water. The slurry was then fed to a centrifuge which spun off the majority of the water from the PVC. The final drying was completed in a rotary dryer.

The water effluent from our PVC production process was discharged into an outdoor collection basin. Using samples from the collection basin, tests were performed for acidity, biological oxygen demand - BOD - chemical oxygen demand - COD - suspended solids and total solids. The test results were provided to the Bureau of Water Pollution Control of the Nassau County Department of Health.

Our PVC manufacturing process was essentially similar to those practices in dozens of other larger installations in the country and indeed throughout the world. The PVC facility was operated in compliance with all government regulations.

Among the wastes created by all PVC operations are small amounts of vinyl chloride. Vinyl choride was first identified as a possible human carcinogen in 1974, one year prior to the closure of our PVC plant. Some have alleged that the vinyl chloride in the aqueous effluents from our former PVC operations was the source of contamination of certain wells of our neighbors, Grumman Aerospace Corporation and the Bethpage Water District. For reasons I will explain in detail, we cannot agree with these allegations.

We believe that extremely little, if any, vinyl chloride in our effluent ever reached the groundwater. According to our best information, our PVC wastewater contained vinyl chloride at levels less than three parts per million. This is equal to a maximum annual discharge of about 60 pounds per year. However, vinyl chloride has a low solubility in water and is a gas at normal temperatures. Because our PVC wastewater was placed in open-air lagoons, it appears that most, if not all, of the traces of vinyl chloride in our effluent were dissipated into the atmosphere.

Our conclusion in this regard is supported by the <u>Environmental Protection Agency's document entitled</u> [illegible]nvironmental Impact Statement on Vinyl Chloride. This [illegible] published in October, 1975. In that document the EPA sta[illegible] . according to their own data, "essentially all" vinyl chloride in wastewater is released into the atmosphere.

To assure that our employees were not adversely affected by our PVC operations, we conducted several tests. In 1976, we tested our plant drinking water. We found no evidence of vinyl chloride with a test sensitivity of one part per billion. Likewise, prior to the time we closed our plant in 1975, each plant employee was given a NIOSH-recommended medical examination. No symptoms associated with excessive vinyl chloride exposure were found in the course of those examinations.

The question raised by our evidence is obvious and important: If reports that vinyl chloride was found in the neighboring wells are accurate and Hooker is not responsible, what is the source of this contamination? I regret, gentlemen, that we cannot provide your committee with a definite answer at this time because we have not had access to the reported test data. For example, over the last 18 months, we have repeatedly requested the Bethpage Water District to provide its well contamination data to us so that we could discuss the matter. To date, they have refused to do so.

Despite our lack of specific data, one fact is known. That is that vinyl chloride is often found unaccountably in drinking water. Again according to an

Environmental Protection Agency study, the cities of Miami and Philadelphia have found vinyl chloride in their municipal water supply - in amounts of 5.6 parts per billion and 0.27 parts per billion, respectively - this despite the fact that there are no PVC or vinyl chloride plants anywhere in the vicinity of these two cities. The source of this information, gentlemen, is an EPA document entitled Scientific and Technical Assessment Report on Vinyl Choride and Polyvinyl Chloride, June, 1975.

To summarize with regard to vinyl chloride, our evidence does not point to Hooker as the source of vinyl chloride contamination. We are, however, concerned about the reported vinyl chloride contaminations in the Hicksville area and pledge our cooperation in helping to identify the source.

I would like now to turn to the question of the chlorinated hydrocarbons.

According to media reports, groundwater contamination by chlorinated hydrocarbons is widespread on Long Island. The specific chemicals identified in these reports have included chloroform; methylene chloride; carbon tetrachloride; 1,1,1-trichloroethylene; trichloroethylene; and tetrachloroethylene. Of these six compounds, only the [illegible]ter two - trichloroethylene and tetrachloroethylene - co[illegible] possibly have ever been present in any of the discharges from Hooker's Hicksville facility. As I will explain, our discharges of these two compounds were very small, ceased entirely by 1975, and, we believe, had no significant impact upon the quality of the groundwater.

First, let me discuss the chemical compound trichloroethylene. Until 1975, we used small quantities of trichloroethylene in the production process for some resins made in the PVC plant. We believe that most of this compound was consumed in the production process and therefore never entered the waste stream. It is possible that trace quantities of trichloroethylene were not entirely consumed and may have been discharged in our wastewater to the lagoons I have previously mentioned. Although we cannot quantify the amounts in question, I am confident that the amounts were minute and that they had no significant impact upon the groundwater quality.

Let me now turn to the other hydrocarbon which Hooker could possibly have discharged to the groundwater, the compound tetrachloroethylene. This compound, also known as perchloroethylene, was used in our ester operations. Tetrachloroethylene was first identified as a carcinogen in late 1977 and we have discontinued use of the product.

During the esterification process in which tetrachloroethylene was used, most of the compound was recovered and recycled in subsequent operations. Small amounts, however, were discharged into the waste stream. I estimate this amount to have been less than 40 pounds per year.

After the construction of our on-site incinerator in 1975, all of our wastewater containing tetrachloroethylene was incinerated. Prior to that time, this effluent was discharged to a settling basin and could have reached the groundwater. However, because the amounts in question were very small, we do not believe that they had any significant impact upon the groundwater.

To summarize about hydrocarbons, our Hicksville facility annually discharged trace amounts of trichloroethylene and less than 40 pounds of tetrachloroethylene. These discharges ceased entirely in 1975. Without minimizing our responsibilities, it is important to place these figures in perspective. Each year the groundwater of Nassau and Suffolk Counties, in our judgment, is contaminated by more than one million pounds of chlorinated hydrocarbons found in drain and cesspool cleaners.

Additionally, large quantities of chlorinated hydrocarbons are used in the Hicksville area and throughout Long Island for dry cleaning, metal degreasing, and other commercial applications. We are unaware of any treatment process that prevents most of these hydrocarbons from reaching the groundwater. Since the national yearly usage of tetrachloroethylene, trichloroethylene and 1,1,1-trichloroethane exceeds 1.5 billion pounds, I suspect that millions of pounds of these chlorinated hydrocarbons may be contaminating Long Island's groundwater.

To repeat, however, we do not believe that our Hicksville facility is contributing to this problem. On the contrary, this facility has an active and responsible waste management program which includes the following five elements: one, the reduction of the rate of waste generation; two, recycling of wastes, wherever practical; three, segregation of the waste streams so that they can be handled more expeditiously than they would be if they were mixed; four, incineration of the combustibles; five, secure landfill containment for noncombustibles.

Our waste management program includes plans for the construction of a second on-site incinerator to incinerate certain solid and liquid wastes which our present incinerator cannot handle. We are presently talking with incinerator manufacturers and hope to place an order for the new equipment within the next few months.

In conclusion, gentlemen, we believe that the past, [illegible]esent, and future waste disposal activities at the H[illegible]ville plant are environmentally responsible and have reflected appropriate concern for Long Island's groundwater.

We stand ready to assist this subcommittee and other government agencies, which are justifiably concerned about Long Island's environmental well-being. I trust that this statement and the other information previously submitted to the subcommittee have been helpful and responsive to your concerns.

Thank you, Mr. Chairman, for the opportunity to present this statement.

Mr. Eckhardt. Mr. Lent?

Mr. Lent. Thank you, Mr. Chairman.

Thank you, Mr. Abramowitz, for your statement.

The thrust of your statement, as I understand it, is that your company, Hooker, although it was the only user of vinyl chloride in the Hicksville area and used that chemical rather extensively in its manufacturing process for some 19 years, is not guilty of the conditions that forced the closing of the nearby wells in the Bethpage Water District.

Is that correct?

Mr. Abramowitz. With regard to the vinyl chloride, allegation of that charge, yes, that is our contention, -.

Mr. Lent. The vinyl chloride -- I beg your pardon --

as I understand it, is in the Grumman well.

Mr. Abramowitz. That is where -- we have not received, unfortunately, as a company any of these test results. All we know is, you might say, what we read in the media. We see tables. We hear people talking. No official agency has supplied us with analytical results showing vinyl chloride monomer in any of their wells.

Mr. Lent. Are you in doubt at all that there was vinyl chloride found in the Grumman wells?

Mr. Abramowitz. Honestly, there could be an honest doubt in my mind because we do not know what test methods were used. We were never asked to participate in taking samples. And this information --

Mr. Lent. You said in your statement that there was extremely little, if any, vinyl chloride that ever reached the groundwater, in your opinion. Is that correct?

Mr. Abramowitz. That is our correct opinion, sir.

Mr. Abramowitz. And you said you wanted to pledge your company's cooperation to help it to find the source.

Mr. Abramowitz. Certainly.

Mr. Lent. This is one of the reasons we are here today.

Mr. Abramowitz. We certainly will do that.

Mr. Lent. If you will refer to this internal memo -- I [illegible]ume you have been provided a copy of it. If not, we should have the clerk deliver it to you.

Refer to, first, page six at the top of the page.

Mr. Abramowitz. Yes.

Mr. Lent. Contrasting these statements with the statement that you gave to the committee that extremely little vinyl chloride ever reached the groundwater, you say in here --

Mr. Abramowitz. Page six.

Mr. Lent. Page six at the top: floor sweeps of polyvinyl chloride and PVC compounds.

Quote: "In our Plant 3 PVC dry blends operation, we accumulate about 500 pounds a day of waste PVC compound in the form of floor sweeps and ventilation dust collector material. This all goes into the trash hopper, and at our present operating mode, 330 days a year, amounts to 165,000 pounds a year of PVC compounds sent to the Bethpage landfill."

Now, if it goes into the Bethpage landfill -- and we heard the testimony of good health commissioner of Suffolk County who is presumably an expert -- there is going to come a time when eventually it is going to percolate down into the groundwater.

Is that not correct?

Do you consider 165,000 pounds "extremely little"?

Mr. Abramowitz. I think we are having a difficulty here. We are mixing up vinyl chloride monomer with PVC. PVC, as already was testified to here today earlier, is an innocuous, inert material.

We indeed, Congressman Lent, have checked the residual vinyl chloride content of some of our PVC compounds representatively, and they range in the low parts per billion. So, we are not talking of 165,000 pounds of vinyl chloride monomer. We are talking about infinitesimal trace residual amounts of vinyl chloride in the order of fractions of a parts per billion.

Mr. Lent. Fractions of a parts per billion?

Mr. Abramowitz. Yes, sir.

Mr. Lent. Let's now turn to page 11.

Mr. Abramowitz. Did we clarify that, sir?

Mr. Lent. Beg pardon?

Mr. Abramowitz. Did we clarify that?

Mr. Lent. Well, I don't want to say; I am not a scientist. I accept your statement, and it will be checked by the committee.

Mr. Abramowitz. The point is they are two different materials.

Mr. Lent. PVC and VC. You are pointing that out, and I am aware of that.

Now turn to page 11, and we will get into the vinyl chloride itself.

There at item number seven, you say: "Commencing in 1956 Hicksville Plant went on-stream with a PVC resin facility making both vinyl chloride" -- now that is VC, right? That's the dangerous one?

Mr. Abramowitz. That is right.

Mr. Lent. -- "vinyl chloride homopolymer and vinyl chloride/vinyl acetate copolymer. Production rate of this suspension plant was ten million pounds a year. Waste water from the plant was discharged to sand sumps on the plant property. This disposal method was followed for 19 years until the plant shut down permanently in 1975.

"This waste water contained approximately 1 percent PVC" -- we are not so worried about that -- "resin solids, and 600 to 1,200 parts per million" -- not billion, million -- of "vinyl chloride."

Now, that is a very significant amount of parts per million of the vinyl chloride; is it not?

Mr. Abramowitz. Yes, it is, if it would be. Congressman, again we have to apologize for phraseology and the punctuation. We analyzed and studied this sentence in depth.

The meaning of it is, 600 to 1,200 parts per million of the following materials combined: vinyl chloride, gelatin, Methocel, stabilizers, the trace of trichloroethylene, and most of it we believe was probably vinyl acetate.

So, we apologize for the punctuation in that particular paragraph.

Mr. Lent. So, what you are saying is that the language "600 to 1,200 parts per million" does not refer simply to vinyl chloride but refers to vinyl chloride, gelatin, and all of the other items that are listed there.

Mr. Abramowitz. That is correct.

Mr. Lent. That is your statement under oath to us here this afternoon.

Mr. Abramowitz. That is correct, sir. We apologize again for the punctuation.

Mr. Lent. All right. And will you be kind enough to provide for the record the breakdown of that 600 to 1,200 parts per million as between the various toxicants that are listed there?

Mr. Abramowitz. We will do our best to provide that information, sir.

Mr. Lent. Then the statement goes on to say along with, "and considerable vinyl acetate."

Is that toxic, vinyl acetate?

Mr. Abramowitz. We do not believe it is toxic in the sense that we are using it here.

We have a little problem with the terminology, as mo[illegible] people do. It refers to the concentrations, the exposures. We have a great deal of discomfort in calling something nontoxic or toxic unless it is accompanied by additional data having to do with exposures and concentrations and so forth.

Mr. Lent. You indicate as well in this memo that you were pumping out two million gallons a year, which over a period of 19 years would come to some 38 million gallons, a year of these chemicals in whatever proportion; but the total proportion being at the rate of 600 to 1,200 parts per million.

Mr. Abramowitz. That is correct, sir.

Mr. Lent. I understand that the well at Grumman came up with 50 parts per million of vinyl chloride. Is that --

Mr. Abramowitz. Parts per billion, I believe.

Mr. Lent. Fifty parts per billion.

Mr. Abramowitz. Fifty parts per million would be an atrocity.

Mr. Lent. Fifty parts per million would be an atrocity.

Well, over here we have in your statement 600 to 1,200 parts per million of one, two, three, four, five different chemicals. And you think the amount of vinyl chloride that would be included in that would be less than parts per million?

Mr. Abramowitz. Less than three, sir, as we testified in our statement.

Mr. Lent. Okay.

When you spoke earlier, you mentioned your ester plant operation. At page 12 you indicate that the waste water stream from plant one contains perchloroethylene. Is that a toxic substance?

Mr. Abramowitz. Perchloroethylene?

Mr. Lent. Yes.

Mr. Abramowitz. Yes, it has been identified as a carcinogen.

Mr. Lent. And also methanol. Is that a toxic?

Mr. Abramowitz. I would have to cop out on that, sir. I am not a toxicologist. My understanding of methanol or methyl alcohol is that you don't drink it, but it is wood alcohol and has many uses. I am not really qualified to say that it is toxic.

Mr. Lent. What would your description be of the other organic acids that are listed there?

Adipic?

Mr. Abramowitz. Yes.

Mr. Lent. Is that toxic?

Mr. Abramowitz. Adipic acid is a material that has been used as a food acidulant. So, we doubt whether that material, if one could use it as a food acidulant, would be toxic.

Mr. Lent. How about trimellitic?

Mr. Abramowitz. Trimellitic is a material which has recently been identified by NIOSH as being a harmful material in the work environment. We have responded to that internally.

Mr. Lent. The next substance: phthalic, p-h-t-h-a-l-i-c?

Mr. Abramowitz. That is pronounced as if it were an "f," so it is phthalic and isophthalic acids.

Those materials are very substantial materials in commerce that are used not only in paints and varnishes -- again, with my previous comment about the nature of the exposure and the concentrations and so forth, they are common materials in commerce that are used in huge quantities. It is hard for me to indicate that they are dangerous materials or toxic.

Mr. Lent. So, you are not concerned with the statement in this memo that starts out, "Today we put out about 4,000 gallons waste water per day - 12,780,000 pounds a year of waste water. Based on an estimated average 2 percent organic content in the waste water, we today put out 250,000 pounds per year of organic wastes at today's 26 million pounds a year production rate."

You feel that that is insignificant?

Mr. Abramowitz. No, sir, we do not. Indeed, we are incinerating - and have been so - since 1975, this entire stream.

Mr. Lent. But for the period 1951 until 1974, the fact is that all of those wastes were fed directly into the ester plant sand sump.

Mr. Abramowitz. Yes, that is correct.

Mr. Lent. And you had some concrete storage facilities there on the premises as well; did you not?

Mr. Abramowitz. Yes.

It might be helpful if I spent a moment to describe that.

Mr. Lent. Okay.

Mr. Abramowitz. This stream coming out of the ester plant - we call it an organic aqueous steam - the first thing it saw was a concrete pit which had an arrangement whereby the heavy materials, the sludge and any rust or any other gunk, would sink to the bottom. The light material would overflow into a second concrete pit. That concrete pit was designed so that the light materials would float, and the heavier materials would go directly into a sand pit.

Mr. Lent. Well, is it not a fact that in this memorandum there is reference to the fact that these concrete pits were pumped out on an annual basis and that the contents of these pits were then placed into one of the landfills?

Mr. Abramowitz. I believe in the early days our own documentation indicates that.

Mr. Lent. Well, in the early days. We are talking about from 1951 until 1974. Are we not?

Mr. Abramowitz. Rollins -- we have incinerated most of that material, I believe, by Rollins. Some of it -- when I say "some of it," occasionally there was sludge that appeared in that first concrete pit which would not go through the Rollins incinerator satisfactorily.

My recollection - if I can keep all these situations and facts in order here - my recollection is that that sludge from pit number one could have gone to the landfill.

Mr. Lent. Just refer to page eight of the first memo, of August 16. With reference to the Syosset Municipal Landfill --

Mr. Abramowitz. Yes.

Mr. Lent. You indicate in the fourth paragraph down, "Time of use of this municipal dump facility 1946 to 1968. Use was lower until 1952 to 1955 and then heavier thereafter. At maximum output we disposed of an estimated 800,000 pounds per year of total solid and liquid waste. This includes 10,000 gallons a year of liquid waste in bulk from our annual pumpout of our concrete pits."

Mr. Abramowitz. Yes, that is correct.

Mr. Lent. So that you did pump these concrete pits out.

Mr. Abramowitz. That is correct.

Mr. Lent. Containing these various chemicals.

Mr. Abramowitz. That is correct.

Mr. Lent. And you took the contents to Syosset and dumped them in that landfill.

Mr. Abramowitz. Our waste truck hauler did do that; yes.

Mr. Lent. So, that is 10,000 gallons a year, roughly, for a period of 22 years. So, that could cause a serious problem of pollution. Could it not?

Mr. Abramowitz. If it wasn't contained. And, also, I think --

Mr. Lent. Wait a minute. "If it wasn't contained." This indicates it was not contained.

Was it barrelized? Or was it contained?

Mr. Abramowitz. No. The bulk portions that were dumped were not contained in our vessels, but it may have been contained in the landfill; we don't know.

Mr. Lent. Well, the Syosset landfill is an old landfill. I think you know as well as I know that there is no containerization at the Syosset landfill. It is just an old-fashioned dump; is it not?

Mr. Abramowitz. Yes. Again, I am having problems with my understanding of containment. Containment does not necessarily mean putting it in a container, the way I think. It could mean that the landfill itself either had a clay bottom or something like that. The material could have been contained in the landfill. I don't know. But that is my problem, I guess.

Mr. Lent. Is it not a fact that Hooker used TMA or trimellitic anhydride in its process?

Mr. Abramowitz. Yes. That is trimellitic anhydride.

Mr. Lent. Is that a -- or are those a dangerous or toxic chemical?

Mr. Abramowitz. As we stated a few moments ago, a NIOSH criteria document recently issued which indicated that that material was hazardous in the workplace.

Now, this may be possibly the time for me to make some comments about the listing of materials that were sent to a landfill which were recited earlier today. As it reads in the document, 10,000 pounds of material a and 20,000 pounds of material b and 5,000 pounds of material c. We would like to clarify that those materials were not taken to the landfill as such. I think we have a nationwide problem here with regard to the use of chemicals in general in paper bags.

We buy millions of pounds of these organic acids, including trimellitic acid anhydride. We buy these materials in 50-pound bags, multi-wall paper bags. In the process, we attempt - because these materials do carry a reasonable price tag - we attempt to empty the bags as best we can.

It is unavoidable for us to antiseptically remove the entire contents of these paper sacks. The author of this document, I was told, used a maximum assumption of four ounces retained in each 50-pound bag which we attempted to empty into the process. It was on that assumption that he calculated the quantities that went to the landfill as dusty material clinging to the containers.

This might be a problem for the committee to address itself to. I think the RCRA act will eventually do this. But there are literally billions of pounds of chemicals that are supplied in these United States in 50-pound bags to users all over the country who then empty the bags to the best of their ability. Because of their inability to practically remove the residual dust, cumulatively the amount of residual chemicals that go to the landfill must be an astonishing total.

Our proposal here to cope with this problem is our second on-site incinerator, which we hope will accumulate all these bags, whether there is one ounce left in them or four ounces left in them. Rather than send this trash, this combustible trash, to the landfill, our intent is to take these materials and incinerate them on-site in compliance, hopefully, with EPA emission standards on incinerators.

Mr. Lent. Well, you don't disagree with Mr. Harrison, the author of this memo, that roughly four ounces were left as residue in the bottom of these bags? Or do you disagree with his conclusion that this amount of 10,000 pounds a year of this TMA?

Mr. Abramowitz. If I had made the estimate myself, I probably would have estimated about half of that. It is a rather distressing realization to management to realize that we are taking stuff in that magnitude and converting it into trash.

I have seen some of the bag unloading operations. I would judge -- and this is my personal opinion -- that the number of bags that have four ounces of retained material in them would be in the minority. Most of them are shaken. Again I say, if I were to be shot at sunrise to make an estimate, I would say my figure would probably be about half of that.

Mr. Lent. The bottom paragraph on page four says -- and this is dated, of course, a year ago -- "A very recent development at Hicksville involves our going from all bulk adipic to a potential 6 million pounds a year of imported French adipic, because of favorable economics. If this goes ahead as we believe, then the amount of adipic acid to the Bethpage landfill will increase to 27,000 pounds a year, based on bag residues."

My question is, did you ever go to the French adipic?

Mr. Abramowitz. We did temporarily. You will be glad to know that the economic differential no longer exists, and we are on U.S. material.

Mr. Lent. So that the statement then - or the summary on page six that there are 27,000 pounds per year of adipic acid going into the Bethpage landfill -- Is that valid today? Or is it invalid?

Mr. Abramowitz. Only with the comment that I made previously, sir. That is that I believe personally that these materials are outside maximums. My own estimate would have been, perhaps, something like maybe a half or, at the most, three-quarters of this quantity.

Mr. Lent. We can conclude probably very quickly at page nine, which indicates that this Bethpage Municipal Landfill has been used by Hooker since 1968. And then it details the various wastes that are going into that plant.

I think everyone has a copy of it. It includes toluene. It includes DMF, MEK, and some PCB therminol wastes, PVC floor sweeps, including PVC sump scrapings containing PVC and the vinyl chloride, vinyl acetate, trichloroethylene, et cetera; and also spent lube oils of

300 gallons a year.

My question is, is that dumping that was going on for years up until the date of this memo in 1968 - is that still going on today as we sit here?

Mr. Abramowitz. Yes, we are still bringing materials to the Bethpage Municipal Landfill - to my knowledge, not necessarily all of these materials. In fact, I could very readily pick out numbers of them which are no longer, haven't been used perhaps for seven years. Specifically, if you wish an example, the PCB therminol wastes, which were discontinued at our plant at about 1972.

Mr. Lent. How about the total figure of 1,600,000 pounds per year? Is that still a valid estimate of the amount of waste that Hooker is putting into the Bethpage Municipal Landfill?

Mr. Abramowitz. That is probably a good order of magnitude figure.

It is our intention, Congressman, to rapidly move to eliminate that entire level with the advent of this second on-site incinerator, which will take all the cardboard boxes, the emptied paper bags, the offspent materials, the filter cakes, and so forth. This is being engineered at the moment.

Mr. Lent. What are you going to do with all this mercury that you have on hand at the Hicksville plant that is referred to in this memorandum?

Mr. Abramowitz. That is page seven.

Mr. Lent. Page seven: 37,414 pounds of 57 percent mercury Metasol.

Mr. Abramowitz. May I comment on the nature of that material and the meaning of those two short paragraphs?

This obsolete product, the 37,000 pounds, is in the form of a polyester which is used or could be used in polyurethane.

The material referred to as Metasol, a mercury derivative, at the time this was produced was a material that was sold as a catalytic agent for producing polyesters. We produced this quantity of product with this mercury catalyst.

The form in which the 37,000 pounds exist today in no way contains the mercury as phenyl mercuric proprionate. It is tied up in that polymeric molecule. We are concerned about it. Nevertheless, because it is and has been identified as a harmful metal, even though it is in there in that form, it is our intention to track that material. Eventually, if we can sell it, we are trying to sell it, somebody may convert it into a useful product. If that cannot be done, I think the ultimate disposition of that will have to be incineration under proper circumstances.

Mr. Lent. What about the 800 drums that are defined in your memo as "difficult chemical wastes stored at the Hicksville site"? Do you have any plans for that?

Mr. Abramowitz. Yes. Not only do we have plans, but, as we look at our chronometers, it is five to three. Probably about 100 of those drums left our site today for Rollins Environmental Services to be incinerated. That would leave, say, at the end of the day about 700. It is our intention to move as rapidly as we can to identify by analysis and by groupings to identify the rest of those drums so that as many of them as possible can be incinerated by Rollins.

My plant people tell us that they are already in the midst of preparing or staging the second load to go. Whatever if left, or if this thing dangles on for weeks or months, we hope to pick up the back end of that with our second on-site incinerator.

Hopefully, what will be left of all that will be antiseptic ash coming out of the incinerator plus, of course, the containers.

Mr. Lent. Mr. Chairman, I have no further question at this point.

Mr. Eckhardt. Mr. Abramowitz, you state in your testimony that, "According to our best information, our PVC waste water contained vinyl chloride at levels less than 3 parts per million."

Mr. Abramowitz. Yes, sir.

Mr. Eckhardt. The examination of the Nassau County Department of Health indicated that in Well 14 vinyl chloride was found at 50 parts per billion, which would be approximately one-sixtieth of the concentration that you have referred to before. Is that right?

As I calculate, three parts per million would be 3,000 parts per billion. And 500 parts per million would be a sixtieth of that amount in the well.

Mr. Abramowitz. Chairman Eckhardt, if I am following your reasoning -- I am sorry; perhaps I am preempting or misinterpreting what you are going to say.

Mr. Eckhardt. What I am saying is that your statement here is that you calculate that something less than three parts per million was contained in lagoons where you were disposing of wastewater, less than three parts per million of vinyl chloride was contained. I refer to page four of your testimony: three parts per million, which is 3,000 parts per billion.

Mr. Abramowitz. Yes.

Mr. Eckhardt. The amount of vinyl chloride found in Well 14 was only one-sixtieth of that amount, or 500 parts per million -- per billion; 500 parts per billion. Excuse me. Fifty parts per billion. I confused the figure.

And 50 parts per billion would be one-sixtieth of what you said might be contained in your lagoon.

Let me state it again.

Three parts per million is 3,000 parts per billion. That is what you said might have been contained in your lagoon as the result of wastewater.

Is that correct?

Mr. Abramowitz. No. I think we have a little nuance here. I think it is significant to our contention --

Mr. Eckhardt. We read the language here. On page four it says, "According to our best information, our PVC waste water contained vinyl chloride at levels less than three parts per million."

Mr. Abramowitz. That is correct.

And I also, respectfully, sir, refer you to the EPA statement that three ppm in the effluents or in the wastewater coming from the PVC plant - the vinyl chloride content of that effluent is assumed to virtually dissipate into the atmosphere and not percolate into the ground.

Mr. Eckhardt. I am not asking that question. All I am asking you is whether or not contained in your wastewater there might have been vinyl chloride at levels of something less than three parts per million. That is what you said.

Mr. Abramowitz. That is absolutely correct.

Mr. Eckhardt. And then I am pointing out that the New York State Department of Health found in Well 14 vinyl chloride at 50 parts per billion.

Now, I am not saying necessarily that all of that vinyl chloride came from your plant. I do not want to draw that conclusion.

All I am trying to say is that three parts per million is 3,000 parts per billion. And the amount of vinyl chloride found in the well was 50 parts per billion, or one-sixtieth of the amount which you state was the maximum that was contained in the wastewater at your plant.

Mr. Abramowitz. That is correct, sir; prior to the reported tendency of vinyl chloride to be a fugitive from water, that is absolutely correct.

Mr. Eckhardt. Your plant and its predecessor produced vinyl chloride for a period of some 19 years. Is that correct?

Mr. Abramowitz. We used vinyl chloride.

Mr. Eckhardt. You used vinyl chloride.

Mr. Abramowitz. That is correct.

Mr. Eckhardt. And I assume you used it -- I assume that both the predecessor and the present plant both could be characterized as having had wastewater which contained not more than three parts per million of vinyl chloride.

Mr. Abramowitz. Going into the lagoon, that is exactly correct.

Mr. Eckhardt. Is it not conceivable that, having used such processes which resulted in that amount of vinyl chloride, that one-sixtieth of that amount could have gotten into the groundwater in the area?

Mr. Abramowitz. It is hard for me to have to agree with that because of the known volatility of this material.

Chairman Eckhardt, if I have a container of vinyl chloride in a glass vessel capped -- and it is a gas normally -- it was under pressure in a gas, gas under pressure being a liquid. If I in this room took the cap off and put the material on the floor, spilled it on the floor, it would instantaneously begin boiling of its own volition on the floor, it having a boiling point of minus 13.8 degrees Centigrade. It would instantaneously flash off into the atmosphere.

When small quantities are in water, dissolved in these traces, that is an impediment; and it will not leave instantaneously, but it will leave.

Mr. Eckhardt. I do not mean to say that, if you poured vinyl chloride in a pure form on this floor or on the ground, that any of it other than a very small trace -- but, after all, 50 parts per million is a small trace; is it not?

Mr. Abramowitz. Per billion?

Mr. Eckhardt. Per billion is a small trace.

I am not saying that vinyl chloride in its pure form would not be volatile. But, when you dissolve any chemical in that much solvent, you have an entirely different chemical character with respect to volatility; do you not?

Mr. Abramowitz. That is exactly correct, sir.

Again, I have to invoke the comments of our own Environmental Protection Agency. I will have to quote again. In their environmental impact statement on vinyl chloride published in 1975, they state that, according to their data, essentiall all of the vinyl chloride in wastewater is released into the atmosphere.

I have problems with that following the arithmetic that we have been --

Mr. Eckhardt. Can you not say essentially that all of it is dissipated if only, say, 3,000 parts per billion remains? Ultimately, by the time that 3,000 parts per billion may have seeped into the ground, due to its volatility, due to its going to other sources, et cetera, there is only one-sixtieth of that left so that you have got 50 parts per billion instead of 3,000 parts per billion. Is that an altogether unreasonable assumption, that some of that, levels of the type I have discussed the soil has been permeated with some degree of vinyl chloride for a period of some 19 years.

Mr. Abramowitz. The persistence -- you know, I have been having some fits over this thing because these allegations have been going on for years now.

I would just like to tell you what some of my other problems are with it.

The plant has not been in operation for four years. We are asked -- if I understood what Mr. Middleton testified to today -- to believe that, after four years that he tested Well 6-1 and came up with the same figure that he did originally.

Mr. Eckhardt. Well, let me suggest --

Mr. Abramowitz. That's a tough one for me --

Mr. Eckhardt. -- the readings that he was reporting from were taken in 1975.

Let me ask you this. Was there any other plant to your knowledge that was producing a product which resulted in any vinyl chloride waste in this area?

Mr. Abramowitz. I do not know of any company in the area that used vinyl chloride monomer per se. There may have been but not to my knowledge.

On the other hand, there are numbers of other areas that -- and we shan't indulge in speculation.

If those results are confirmed in that Well 6-1, then there has to be some realistic accountability where that material came from.

Mr. Eckhardt. That's what nags me.

Mr. Abramowitz. Therefore --

Mr. Eckhardt. I don't know where it came from if it didn't come from Hooker. If we had discovered that there were several other plants in the area producing vinyl chloride or using substances that resulted in some vinyl chloride waste, it would be easier for me to see how --

Mr. Abramowitz. Chairman Eckhardt, as long as we are sharing discomforts, the data on Philadelphia and Miami are rather interesting. If you go to the source, the EPA document states that the feedwater, the water going into the Philadelphia municipal water treatment system, showed no detectable vinyl chloride monomer. Coming out of the municipal treatment system, they have reported a fraction of a part per billion.

In the case of Miami, the input to the municipal drinking water system -- if I recollect my figures, the input was something like one part per billion. Coming out of the other end, ready for drinking, is 5.6 parts per billion.

I have a lot of problems --

Mr. Eckhardt. I am not finding difficulty with that so much. That is a very, very small quantity.

I understand that EPA in a national survey of drinking water supplies found in 1975 that the highest level of vinyl chloride in any water system surveyed was ten parts per billion. Now, that is one-fifth as much as was found in Nassau County in Well Number 14.

So, though 50 parts per billion is a mere trace, it is nevertheless five times as great as any of the tests that EPA made in a national survey for 1975.

It would seem to me that, when one finds vinyl chloride in five times the maximum over the country in this area, and when one knows that there was water in lagoons as wastewater from Hooker containing vinyl chloride at sixty times that amount, and when one also finds no other producer of vinyl chloride in Long Island or in the area, that there is at least some suspicion that the vinyl chloride in the drinking water, not having been explainably produced anywhere else and being five times as great as any found elsewhere in the United States, is likely to have got there through Hooker's lagoons.

That is all I am suggesting. I do not say that that can be finally determined. But I do say that I find no other explanation of it. And I must conclude that there is at least evidence that Hooker contributed to the vinyl chloride content of the drinking water of this area.

Mr. Lent. Mr. Chairman, if I could just add two other factors to that.

Number one is the proximity of the Hooker plant to the Grumman well, which was about 1,500 feet.

Number two is the fact that the watertable in that area flows south-southeast from the Hooker plant toward Grumman.

The third factor is that the groundwater flow in that area, according to the hydraulic engineers, is at the rate of about a few hundred feet per year.

So, taking all these indicia and adding them all up together, it seems to flow as night from the day that the contamination, which was far greater than is present in either Philadelphia or Miami, had to come from Hooker.

Mr. Abramowitz. As I indicated, we have some reservations about it. We share, I think -- perhaps you share some of my confusion about it. I am hopeful that Hooker could be allowed to contribute to the resolution of this problem and be made a party to the data, to be allowed to sample the wells, to be allowed to look at the analytical procedures.

We had one helluva time with analytical procedures in the range of parts per billion. I cannot imagine that others - reportedly and admittedly with less resources .- are picking these things up with ease.

So, we sure would like to have an opportunity to help in that regard.

Mr. Eckhardt. Let me say that I appreciate your saying that. We, of course, are not in a position to direct anyone else to deliver those materials to you; but we do hope that all persons involved or possibly involved and all agencies engaged in controls and observation in the matter will cooperate in determining that.

Let me get to one other point here.

You state in your statement here that, with respect to chlorinated hydrocarbons: "Although we cannot quantify the amounts in question, I am confident that the amounts were minute and that they had no significant impact upon the groundwater quality."

Well, again, let us take here the substance trichloroethylene. You produce that; do you not?

Mr. Abramowitz. We used the material.

Mr. Eckhardt. You use the material.

Mr. Abramowitz. We used. We no longer use it.

Mr. Eckhardt. How long did you use it?

Mr. Abramowitz. We have had some problems with reconstructing that. Let me indicate what they were.

Reconstructing the quantification of everything we used in the PVC plant for a period of 19 years, the difficulty essentially arose from the fact that we made both homopolymers and copolymers. Not all of our resins contained trichloroethylene. Most of the homopolymers had no trichloroethylene in it at all. Well, to the extent that the resins that did require trichloroethylene, to the extent that we used it for those resins, the material was not used as a solvent; it was used as a chemically reactive material.

Every indication we have is that we put it in there to go into the resin. The resin properties that we got from that production indicated that chain transfer had taken place, and trichloroethylene was in the product.

Mr. Eckhardt. But there would be some trichloroethylene in some of your --

Mr. Abramowitz. We grant in the statement --

Mr. Eckhardt. -- lagoons, I assume.

Mr. Abramowitz. We grant in the statement; yes, sir.

Mr. Eckhardt. As a matter of fact, you say you cannot quantify the amounts; you are confident that it was minute amounts but not enough to affect groundwater.

You do not say how much. You do refer at a later time to tetrachloroethylene. You say: I estimate "small amounts, however, were discharged into the waste stream. I estimate this amount to have been less than 40 pounds per year."

Mr. Abramowitz. That is correct, sir.

Mr. Eckhardt. Would trichloroethylene be more or less than that 40 --

Mr. Abramowitz. Significantly less, would be our judgment.

Mr. Eckhardt. Well, would you say that --

Mr. Abramowitz. I cannot quantify it; but, if you press us, again, to the wall, we would have to say that it could not have been, you know, more than maybe a part per million or some such --

Mr. Eckhardt. What about 30 parts per million? Would that be out of the ballpark?

Mr. Abramowitz. Probably would be; as I sit here in an armchair -- without an armchair -- and guess at it.

Mr. Eckhardt. Of course, if there was as much as 30 parts per million and one-sixtieth of it got in the water supply, that would be the 500 parts per billion that was found in groundwater.

Was anybody else using trichloroethylene during that time period?

Mr. Abramowitz. Grumman testified today -- and I think we had this from more than one testifier, Mr. Chairman -- that Grumman used significant quantities of trichloroethylene.

Their past practices, from what I have heard as recently as 45 minutes ago -- I did not hear too many comments about the details of their past practices. I heard that, up to 1977 or '78, they believed that they had the thing in tow, but --

Mr. Eckhardt. But, at any rate -- of course, if you were both using it, the cumulative effect would create at least some likelihood of leaching into the groundwater. Would it not?

Mr. Abramowitz. Yes, it would, sir.

Mr. Eckhardt. That is all I have. I thank you for your testimony here and your willingness to stay so late.

Mr. Abramowitz. We have appreciated the opportunity to throw some other zingers in there. I guess all we keep hearing is, you know, the Hooker plant did this and the Hooker plant did that. We welcome the opportunity to be invited and pledge our cooperation in any additional information you may require. Thank you.

Mr. Eckhardt. Thank you very much.

Mr. Lent?

Mr. Lent. I just wanted the record to note that we have received statements submitted by the Long Island Water Conference. They asked that it be made a part of our record.

Mr. Eckhardt. Without objection, the material referred to will be inserted into the record.

[Material follows:]

Mr. Eckhardt. The subcommittee is now adjourned, subject to the call of the chair.

(Whereupon, at 3:20 p.m., the subcommittee was recessed, subject to the call of the chair.)

Hooker RUCO DIVISION

NEW SOUTH ROAD, HICKSVILLE, NEW YORK 11802
PHONE (516) 931-8100 TWX 510 221-1871

April 29, 1981
Engr. 3928

Nassau County Department of Health
240 Old Country Road
Mineola, New York 11501

Attention: Mr. L. Sama, Public Health Engineer
Bureau of Land Resources Management

Dear Larry:

Attached is a listing of all storage tanks, capacities, materials stored in each tank, and how they are handled. We have included a site map indicating locations of all tanks.

Tanks at location B nos. 14, 15, 16, 17A, 17B, 17C, 18A, 18B, 18C, 19A, 19B, 20A, 20B, 21, 22, tanks 1, 2, and 3 at location F and the separator and receiver at location K are below ground. A total of 14. Seventy-two (72) tanks are above ground.

The information submitted is part of our Spill Control Plan.

P. B. DeVries
Site Engineering Manager

PBV/es
enc.
cc: J. B. Harrison
H. Dubec

HRC 001 1384

I. PRESENT FACILITIES & OPERATIONS

A. MATERIALS COVERED

1. Listed below are the materials covered by this plan:

MATERIAL	STORAGE VOLUME
Ethylene Glycol/Propylene Glycol Mixture (EPG)	5,000 gal.
1,4-Butanediol	5,000 gal.
Dioctyl Adipate (DOA)	20,000 gal.
Normal Octyl-Normal Decyl Tri-Mellitate	5,000 gal.
S-1011-35	5,000 gal.
F-203	30,000 gal.
1,6-Hexanediol	11,000 gal.
F-2403	6,000 gal.
F-2401	6,000 gal.
26TM	38,200 gal.
#6 Oil	105,000 gal.
C_7C_9TM	8,000 gal.
T-10TM	24,000 gal.
#2 Oil	34,700 gal.
Alcohols	7,650 gal.
Alcohol Strip	6,000 gal.
Ethylene Glycol	20,000 gal.
Diethylene Glycol	20,000 gal.
C_7C_9 Alcohol	55,000 gal.
2-Ethylhexanol	80,000 gal.
Isopropanol	8,000 gal.
Methyl Ethyl Ketone	6,500 gal.
Toluene	15,000 gal.
Dimethylformamide	10,000 gal.
Iso-octyl Alcohol	10,000 gal.
Adipic Acid	8,000 $ft.^3$
Process Hold Tanks	8,200 gal.
Strip Hold Tanks	9,000 gal.
Empty Tanks	56,700 gal.
Incinerator Hold Tank	30,000 gal.
Incinerator Effluent Separator	4,000 gal.
Incinerator Effluent Receiver	16,000 gal.
TOTAL LIQUID STORAGE CAPACITY	664,950 gal.
TOTAL RAW MATERIAL SOLID STORAGE CAPACITY	8,000 $ft.^3$

B. STORAGE TANK LISTING BY LOCATION (SEE ATTACHED MAP)

LOCATION A

Tank No.	Contents	Volume	
23	Alcohol Strip	2,000 gal.	Compartmented Tank Car
24	Alcohol Strip	2,000 gal.	
25	Alcohol Strip	2,000 gal.	

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LOCATION A (cont'd)

Tank No	Contents	Volume	
26	Alcohol	2,550 gal.	Compartmented Tank Car
27	Alcohol	2,550 gal.	
28	Alcohol	2,550 gal.	
A	2-Ethylhexanol	10,000 gal.	
B	2-Ethylhexanol	10,000 gal.	
C	Product	5,000 gal.	- empty
D	Di-octyl Adipate	5,000 gal.	
E	Iso-octyl Alcohol	5,000 gal.	
F	Iso-octyl Alcohol	5,000 gal.	
G	Alfol 610	10,000 gal.	
H	2-Ethylhexanol	10,000 gal.	
I	2-Ethylhexanol	10,000 gal.	
J	2-Ethylhexanol	5,000 gal.	Compartmented Tank
K	Product	5,000 gal.	- empty
L	Di-octyl Adipate	5,000 gal.	Compartmented Tank
M	Di-octyl Adipate	5,000 gal.	

Materials in tank numbers 23 through 28 are received from another area of the site via tank truck. Materials in tanks A and B are received in bulk (tank truck), and transported to other plant areas in bulk (tank truck). Materials in tanks C and D are received in bulk (tank truck) from other plant areas and shipped in bulk (tank truck) off the site. Materials in tanks E through J are received in bulk (tank truck). Materials in tanks K, L, and M are received from other plant areas in bulk (tank truck) and are shipped off the site in bulk (tank truck).

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LOCATION B

Tank No	Contents	Volume	
14	#6 Oil	30,000 gal.	
15	#6 Oil	30,000 gal.	
16	Incinerator Hold	30,000 gal.	- empty
17A	26TM	8,000 gal.	Compartmented Tank
17B	26TM	8,000 gal.	
17C	C_7C_9TM	8,000 gal.	
18A	T101M	8,000 gal.	Compartmented Tank
18B	T101M	8,000 gal.	
18C	T101M	8,000 gal.	
19A	#2 Oil	12,500 gal.	Compartmented Tank
19B	#2 Oil	12,500 gal.	
20A	#6 Oil	12,500 gal.	Compartmented Tank
20B	#6 Oil	12,500 gal.	
21		5,000 gal.	- empty
22		5,000 gal.	- empty
Silo 1	Adipic Acid	4,000 ft^3	- solid
Silo 2	Adipic Acid	4,000 ft^3	- solid

Material in tanks 14 and 15 is received in tank trucks, and shipped to tanks 1 and 2 (Location C) in tank trucks. Material in tank 16 is received by tank truck or internal pipe. Materials in tanks 17 A-C and 18A-C are received by tank truck from other plant areas and shipped off-site in tank trucks. Material in tank 19A-B is received by tank truck and transported to tanks 3 and 4 (Location C) by tank truck. Material in tanks 20A-B is received in tank trucks and transported to tanks 1 and 2 (Location C) in tank trucks. The material in silos 1 and 2 is received by railcar or tank truck.

LOCATION C

Tank No	Contents	Volume
1	Ethylene Glycol	5,000 gal.
2	1,4 - Butanediol	5,000 gal.
3	26TM	5,000 gal.
4	NTM	5,000 gal.
4A	S-1011-35	5,000 gal.
5	F203	10,000 gal.
6	F203	10,000 gal.
7	1,6 - Hexanediol	11,000 gal.
10A	F2403	6,000 gal.
10B	F2401	6,000 gal.
11A	26TM	5,000 gal.
11B	26TM	5,000 gal.
12A	F203	5,000 gal.
12B	F203	5,000 gal.

Materials in tanks 1 and 2 are received in tank truck and piped to other plant areas. Materials in tanks 3 and 4 are received by tank truck from other plant areas and shipped off-site in tank trucks or drums. Material in tank 4A is received by pipeline from other plant areas and shipped off-site in tank trucks or drums. Materials in tanks 5 and 6 are received by pipeline from other plant areas and shipped off-site in tank trucks or drums. Material in tank 7 is received in tank cars or tank trucks and piped to other plant areas. Material in tanks 11A-B is received from other plant areas in tank trucks and shipped off-site in tank trucks or drums. Materials in tanks 10A-B and 12A-B are received by pipeline from other plant areas and shipped off-site in tank trucks or drums.

LOCATION D

Tank No	Contents	Volume
A	Hold Tank	1,000 gal.
B	Hold Tank	1,000 gal.
C	Hold Tank	1,000 gal.
D	Hold Tank	1,250 gal.
E	Hold Tank	1,250 gal.
F	Hold Tank	1,350 gal.
G	Hold Tank	1,350 gal.
	Strip Tanks	9,000 gal. - Total (18 ea at 500 gal)

Materials in tanks A through G are received by pipeline from other plant areas and transported to various storage tanks by pipeline. Materials in the strip tanks are received by pipeline from other plant areas and transported to other plant areas by pipeline.

HRC 001 1389

LOCATION E

Tank No	Contents	Volume
29	Ethylene Glycol	20,000 gal.
30	Diethylene/Propylene Glycol	20,000 gal.

Materials in tanks 29 and 30 are received by tankcar and tank truck and transported to other plant areas by pipeline.

HRC 001 1390

LOCATION 1

Tank No	Contents	Volume
1	#6 Oil	10,000 gal.
2	#6 Oil	10,000 gal.
3	#2 Oil	3,000 gal.

Materials are received in tank trucks and transported to other plant areas by pipeline.

HRC 001 1391

LOCATION C

Tank No	Contents	Volume
202	261M	12,200 gal.
203		12,200 gal - empty
6		5,000 gal. - empty
7		5,000 gal. - empty
10		12,500 gal. -empty

Materials in tanks 202 and 203 are received by pipeline from other plant areas and shipped off-site in tank cars or tank trucks; or are transported to storage tanks by pipeline.

HRC 001 1392

LOCATION H

Tank No	Contents	Volume	
31	2-Ethylhexanol	30,000 gal.	
32	2-Ethylhexanol	25,000 gal.	
33	2-Ethylhexanol	25,000 gal.	
	Isopropanol	8,000 gal.	Compartmented Tank
	Methyl Ethyl Ketone	6,500 gal.	Compartmented Tank
	Toluene	15,000 gal.	
	Dimethylformamide	10,000 gal.	

materials are reveived in tank trucks and transported to other plant areas by pipeline.

LOCATION I

Tank No	Contents	Volume
4	#2 Oil	3,700 gal.

Material is received by tank truck and transported to other plant areas by pipeline.

LOCATION J

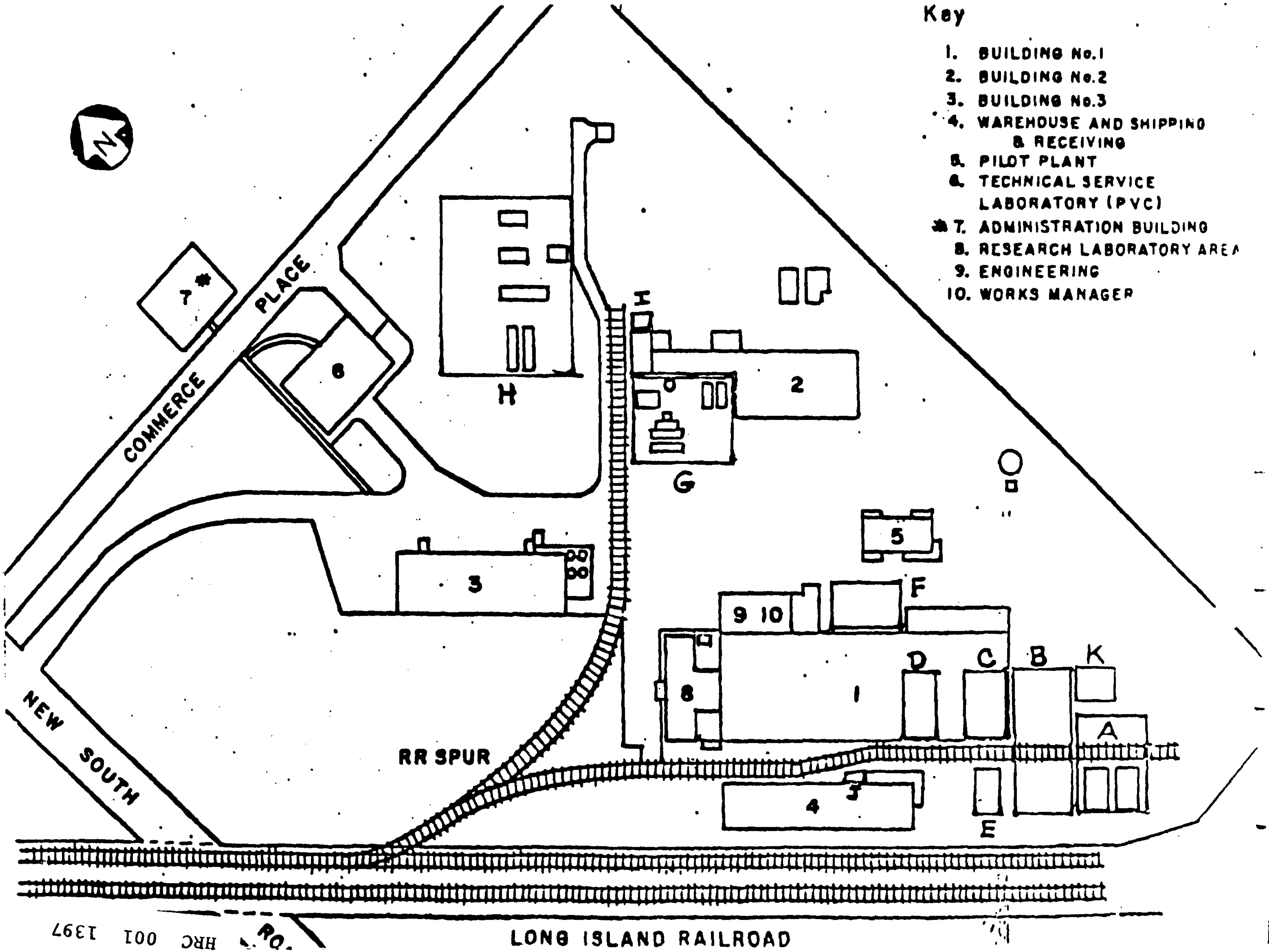
Tank No	Contents	Volume
		2,000 gal. - empty

LOCATION K

Tank No.	Contents	Volume
Effluent Separator	Effluent	4,000 gal.
Effluent Receiver	Effluent	16,000 gal.

Effluent separator is an open top concrete tank designed to separate solids from incineratorable effluent.

Effluent receiver is an open top compartmented (4) concrete tank used to collect and store effluent prior to incineration. One compartment is agitated, and from this compartment effluent is pumped to the incinerator.


Key
1. BUILDING No.1
2. BUILDING No.2
3. BUILDING No.3
4. WAREHOUSE AND SHIPPING & RECEIVING
5. PILOT PLANT
6. TECHNICAL SERVICE LABORATORY (PVC)
* 7. ADMINISTRATION BUILDING
8. RESEARCH LABORATORY AREA
9. ENGINEERING
10. WORKS MANAGER
N
COMMERCE PLACE
NEW SOUTH RD.
RR SPUR
LONG ISLAND RAILROAD
H
G
I
F
D
C
B
K
A
E
J
9 10

LOCATION J

Tank No	Contents	Volume
		2,000 gal. - empty

LOCATION K

Tank No.	Contents	Volume
Effluent Separator	Effluent	4,000 gal.
Effluent Receiver	Effluent	16,000 gal.

Effluent separator is an open top concrete tank designed to separate solids from incineratorable effluent.

Effluent receiver is an open top compartmented (4) concrete tank used to collect and store effluent prior to incineration. One compartment is agitated, and from this compartment effluent is pumped to the incinerator.

HRC 001 1399

ENVIRONMENTAL ACTION INPUT SHEET

Folio: 62707 (5) Date Entered: 6/19/81 (6) Agency: N.Y. STATE DEC (25)

Industry Group: P&CS (4) Division: FAB. PDTS. (4) Location: Hicksville, NY 11802 (20)

Type of Folio: Request for information (20) Number of Items Included: 1 (4)

Notice Date: 6/9/81 (6) Thru: ______ (6) Date Alleged Occur: ______ (6) Thru: ______ (6)

Date of Next Action: ______ (6)

Allegation: ______ (55)

______ (55)

Action Reqsted: Request for information (underground injection control) (55)

______ (55)

Current Status: ______ (55)

______ (55)

Penalty Propsd: ______ (20)

Disposition When Closed: ______ (46)

Net Payment: ______ (9) Cost of Corrective Action: ______ (9)

Date of Completion of Corrective Action: ______ (6) Date Closed: ______ (6)

Comments: ______ (55)

Contact Name: Philip B. DeVries (20) Contact Tel. No.: (516) 931-8100 (10)

HRC 001 1400

hooker RUCO DIVISION

NEW SOUTH ROAD, HICKSVILLE, NEW YORK 11802
PHONE (516) 931-8100

June 19, 1981

Mr. Dan Meszler
New York State Dept. of Environ. Conservation
Bureau of Permits & Compliance
50 Wolf Road - Room 201
Albany, NY 12233

Dear Mr. Meszler:

Attached Underground Injection Control Questionnaire for the Hicksville facility, Hooker Chemicals & Plastics Corporation, is forwarded in compliance with your request.

As per your conversation with John Hanna of Whiteman, Osterman & Hanna, we have not included any sump that is shallower than its largest surface dimension.

Very truly yours,

Philip B. DeVries
Plant Engineer

PBD:sg/engr. 3965

Attachments

CERTFIED MAIL
RECEIPT REQUESTED

bc: J.B. Harrison
G. Dubec
A. Katona
John Hanna

HRC 001 1401

Questionnaire for Underground Injection Control
(U.I.C.) Program

1 BUSINESS NAME AND LOCATION

NAME: HOOKER CHEMICALS & PLASTICS CORP.

STREET: New South Road

CITY: Hicksville | STATE: NY | COUNTY: Nassau | ZIP: 11802

2 TYPE OF OWNERSHIP (check one)

☑ PRIVATE ☐ PUBLIC ☐ STATE ☐ FEDERAL ☐ OTHER (specify)

3 DESCRIBE NATURE OF BUSINESS

Manufacture of Specialty Polymers and chemicals for the plastics industry.

4 OWNERS / OPERATORS NAME AND ADDRESS

OWNERS NAME: HOOKER CHEMICALS & PLASTICS CORP.

STREET ADRESS: New South Road

CITY:	STATE:	COUNTY:	ZIP:
Hicksville	New York	Nassau	11802

OPERATORS NAME (if different from owner):

STREET ADRESS:

CITY:	STATE:	COUNTY:	ZIP:

5 DISCHARGE INFORMATION

PLEASE PROVIDE THE REQUESTED INFORMATION FOR EACH DISCHARGE FROM YOUR FACILITY ON THE DISCHARGE INFORMATION SHEET APPENDIX A THAT FOLLOWS.

6 DISCHARGE FACILITY LOCATION

PLEASE INDICATE ON A SKETCH (OR MAP IF AVAILABLE) THE LOCATION OF EACH DISCHARGE FACILITY; BE SURE TO REFERENCE THE LOCATIONS TO AN EXISTING STREET OR HIGHWAY OR OTHER APPROPRIATE LANDMARK.

7 CONTACT

PLEASE INDICATE THE PERSON TO CONTACT IF FURTHER QUESTIONS ARISE.

NAME: Philip B. DeVries

TITLE: Plant Engineer | TELEPHONE NUMBER: (516) 931-8100

MAILING ADDRESS: Hooker Chemicals & Plastics Corp. - New South Road

CITY:	STATE:	COUNTY:	ZIP:
Hicksville	NY	Nassau	11802

8 REPORTER'S INFORMATION

NAME: Philip B. DeVries | TITLE: Plant Engineer | DATE: June 15, 1981

SIGNATURE: Philip B DeVries

HRC 001 1402

APPENDIX A

5 DISCHARGE INFORMATION

DISCHARGE NUMBER — TYPE AND SOURCE OF FLUID OR WASTE BEING DISCHARGED

002 per SPDES permit Sanitary Wastes from Plant

LIST ALL SUBSTANCES CONTAINED IN DISCHARGED FLUID OR WASTE WHICH ARE PRESENT AS A RESULT OF YOUR OPERATIONS, ACTIVITIES OR PROCESSES AND INDICATE THE AVERAGE CONCENTRATION (in MG/L*) AND THE AMOUNT GENERATED (in KG/MO**) FOR EACH

None (apparent sanitary waste)

STATUS OF FACILITY †

UC P [X] E
TA PA AN

☐ SURFACE DISCHARGE
☒ SUBSURFACE DISCHARGE

NORMAL USE OF DISCHARGE FACILITY (storage, disposal etc.):

Disposal

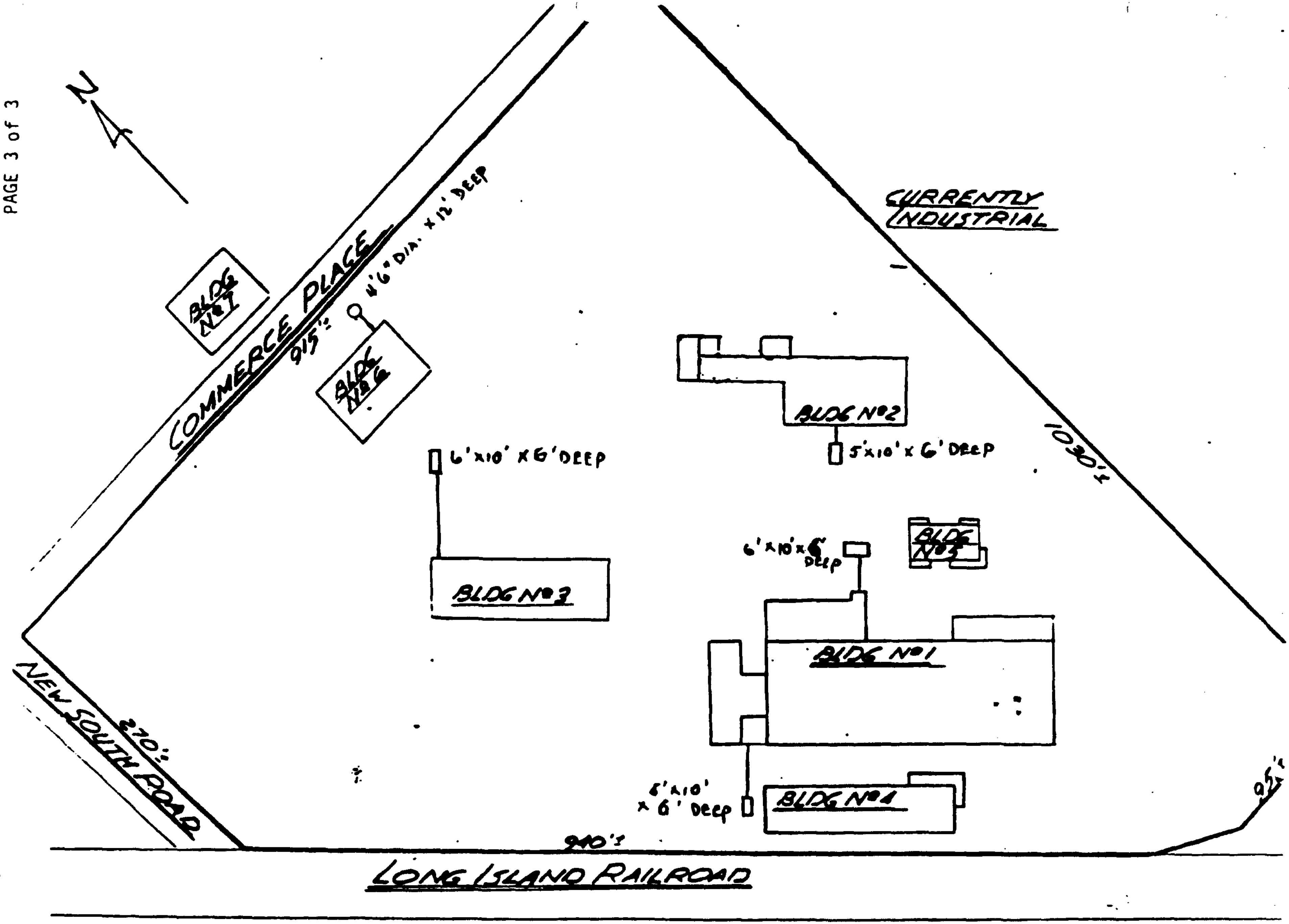
GIVE TYPE AND DESCRIPTION OF DISCHARGE FACILITY (include depth and lateral demensions, design flow, actual flow, etc.):

5 septic tanks, approximate dimensions [2 - 5' - 0" X 10' - 0" laterally & 6' deep
[2 - 6' - 0" X 10' - 0" laterally & 6' deep
[1 - 4' - 6" dia. laterally & 12' deep

Total Design flow - 4,000 gallons/day
Actual flow - 3,000 gallons/day

* Milligrams per liter
** Kilograms per month during an average month
† UC—Under construction
E—Existing
P—Proposed
TA—Temporarily abandoned (indicate date and expected length of abandonment in space above boxes.)
PA—Permanently abandoned and approved by the State (give date.)
AN—Permanently abandoned and not approved by the State (give date.)

IF ENOUGH DISCHARGE INFORMATION SHEETS ARE NOT PROVIDED, PLEASE MAKE COPIES SO THAT EVERY DISCHARGE IS REPORTED



PLOT PLAN SHOWING SEPTIC TANK
HOOKER CHEMICAL CO.
RUCO DIVISION
SCALE: NONE DATE: 2/19/80

Well #1
abandoned

WELL LOG NPCC No.

F-D ???BENTER Address SOUT ROAD H. CASKILL

Started 4-15-55 Completed 4 23-55 Driller THALMAN

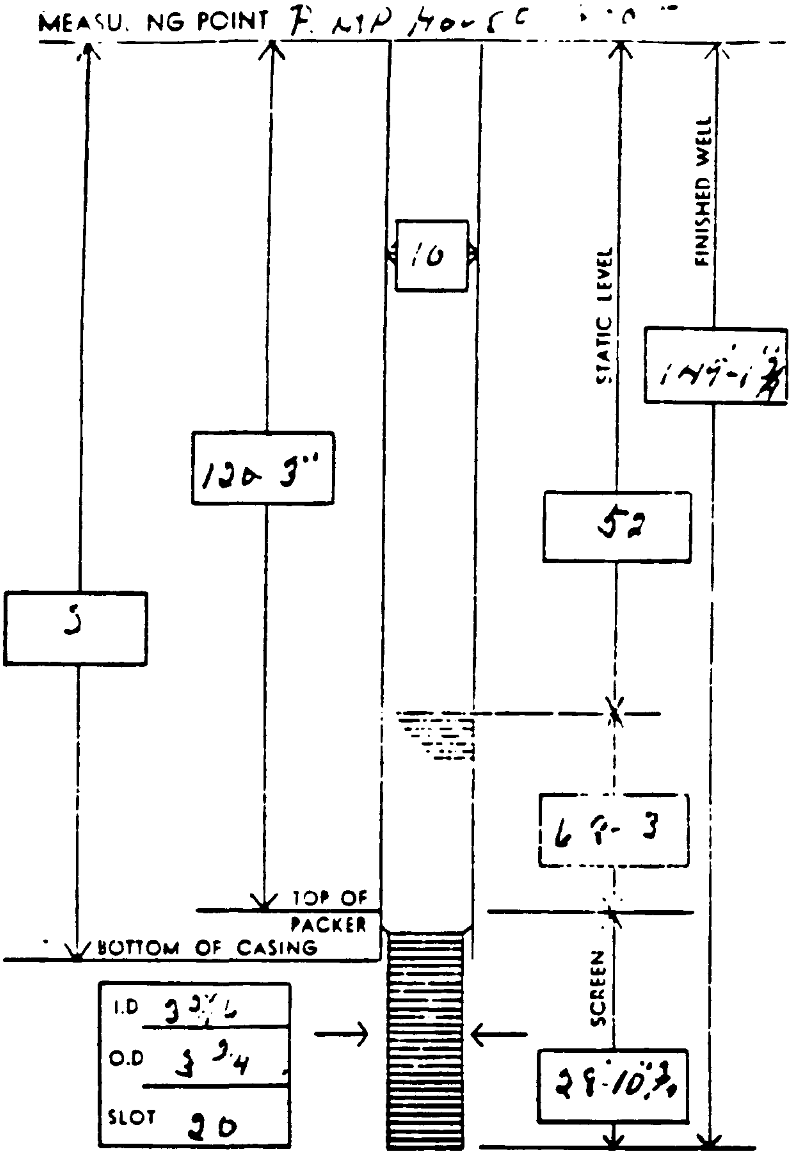
Diameter 10" In. Measured from Grade ☑ Yes ☐ No

Depth 149 Ft. 1 ¾ In. Above Ft. In. Below Ft.

Static Level 52 Ft. In. Elevation Ft.

	STRATUM		TEMPERATURE	
	THICKNESS	DEPTH	SAND	WA

HRC 001 1406



SKETCH OF LOCATION

Show North Point

Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Type of Screen— 300

NOTE — If outer casings are used state diameter, length and whether or not left in the ground.

NOTE — If screen is finished off with riser, give exact description of top of riser—(size and male or female thread.)

REMARKS— 4" LINER SCREEN

1- 6" FOOT VALVE

1- 6" X 6" NIP

HRC 001 1407

V406-7/53-3M

Name 10D - Rubber Corporation Date 4-14-50

Address New South Road, Hicksville, L.I.

~~Motor~~ Make U.S. Elect.

25 H.P. 440 V 60 Cyc. 3 Ph.

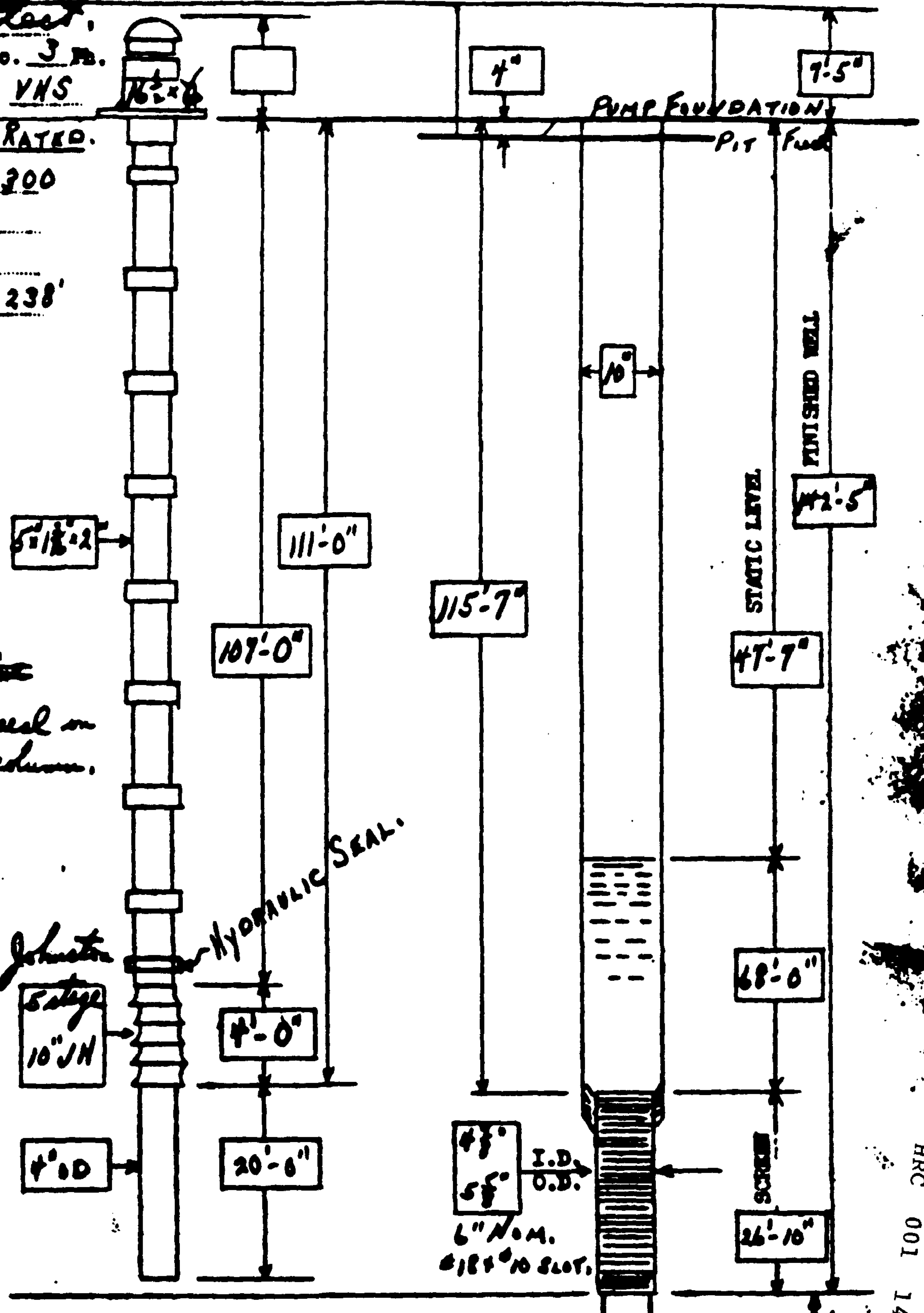
RPM 1760 Type VHS

	Req'd	Rated
Duty:- G.P.M.	300	300
Lift		
Disch.	60# (138')	
T.D.H.		238'

Remarks:-

~~Install air line~~

Install hydraulic seal on bottom section of column.



C. W. LAUMAN & CO., INC.

BETHPAGE, L.I., N.Y.

Job Name Rubber Corp. of America Date Started January [illegible]
Date Completed March 13, 1951

Job Location Hicksville, L.I., N.Y.

Diameter of Well — ft. 10 in. Total depth of well 149 ft. 10 in.

Static Level 55 ft. — in. To top of Screen 123 ft. — in.

Reference Point Top of casing

Reference Point ~~above~~ below Grade Level — ft. 12 in. Driller Duncan

Remarks

Formation	Thickness of Stratum	Depth of Stratum	Temperature Sand	Temperature Water
Coarse gravel and sand	40'	40'		
Hard pan & coarse gravel	3'	43'		
Coarse gravel & sand	7'	50'		
Sand & clay	2'	52'		
Sand & clay	3'	55'		
Fine sandy clay - some mica	3'	58'		
Coarse sand	3'	61'		
Sand & clay (not much life)	4'	65'		
Coarse sharp gravel & sand - some clay	3'	68'		
Fine sand - Brown - some clay	4'	72'		
Fine grey sand	4'	76'		
Fine brown sand - some clay	4'	80'		
Streaks of multi-colored clays hard pan	4'	84'		
Fine grey sand & some clay	6'	90'		
Fine brown sand with pieces of white clay	4'	94'		
Red sandy clay with hard pan	1'	95'		
Grey sand	6'	101'		
Fine brown sand	3'	104'		

NOTE -- Record temperatures of sand and water every 10 ft. in depth.
NOTE -- FILL IN SKETCH ON REVERSE SIDE
If well or screen is reduced in diameter, show on sketch.
*Reference Point--On every job denote reference point as "cellar floor," "top of casing" etc. TAKE ALL MEASUREMENTS FROM THIS POINT. Show relation of reference point to grade level.

Page #2

SUPPLY WELL LOG

Job Name Rubber Corp. of America .... Date Started ....
Date Completed ....

Job Location. ....

Diameter of Well ...... ft. ...... in. Total depth of well ...... ft. ...... in.

Static Level ...... ft. ...... in. To top of Screen ...... ft. ...... in.

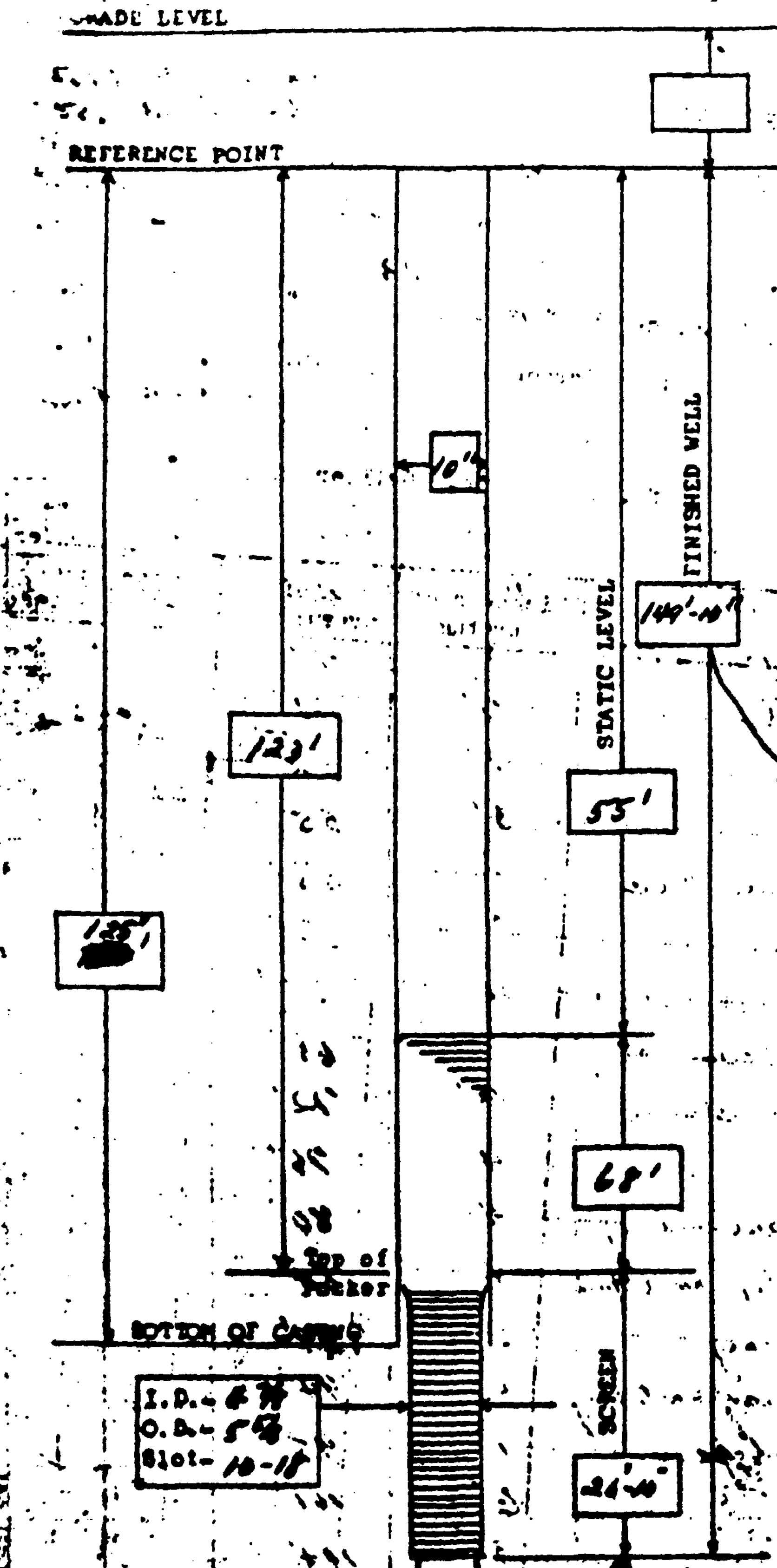
Reference Point ....

Reference Point above/below Grade Level ...... ft. ...... in. Driller ....

Remarks

Formation	Thickness of Stratum	Depth of Stratum	Temperature Sand	Temperature Water
Fine grey sand	3'	107'		
Grey sandy clay	3'	110'		
Grey sandy clay	7'	117'		
Fine grey sand (dirty)	9'	126'		
Medium fine red sand	2'	128'		
Fine red sand	6'	134'		
Fine red sand (dirty) & hard pan	6'	140'		
Medium fine brown sand clean	7'	147'		
Light brown sand - small pieces of clay	2'	149'		
Medium fine brown sand & hard pan	2'	151'		
Yellow clay	3'	154'		
Sandy clay	6'	160'		
Sandy clay	5'	165'		

NOTE -- Record temperature of sand and water every 10 ft. in depth.
NOTE -- FILL IN SKETCH ON REVERSE SIDE
If well or screen is reduced in diameter, show on sketch.
Reference Point--On every job denote reference point as "cellar floor", "top of casing" etc. TAKE ALL MEASUREMENTS FROM THIS POINT. Show relation of reference point to grade level.



All measurements from top of 10" casing which is 12" above grade. Screen is 6" slip screen with 10" packer right & left coupling on the bottom with 4" x 5' tail piece and 18" wood plug - Top of wood plug 153'-4"

~~Total bottom~~ of 4" tail piece 154'-10"

top 10' #15 slot

bottom 2' 18 slot

NOTE: If under casings are used state diameter length and whether or not left in the ground.

NOTE: If screen is finished off with riser, give exact description of top of riser (also add note of ... ground).

HRC 001 1411

Date 4-[illegible]-55

3 Ph.

1760 Type VHS

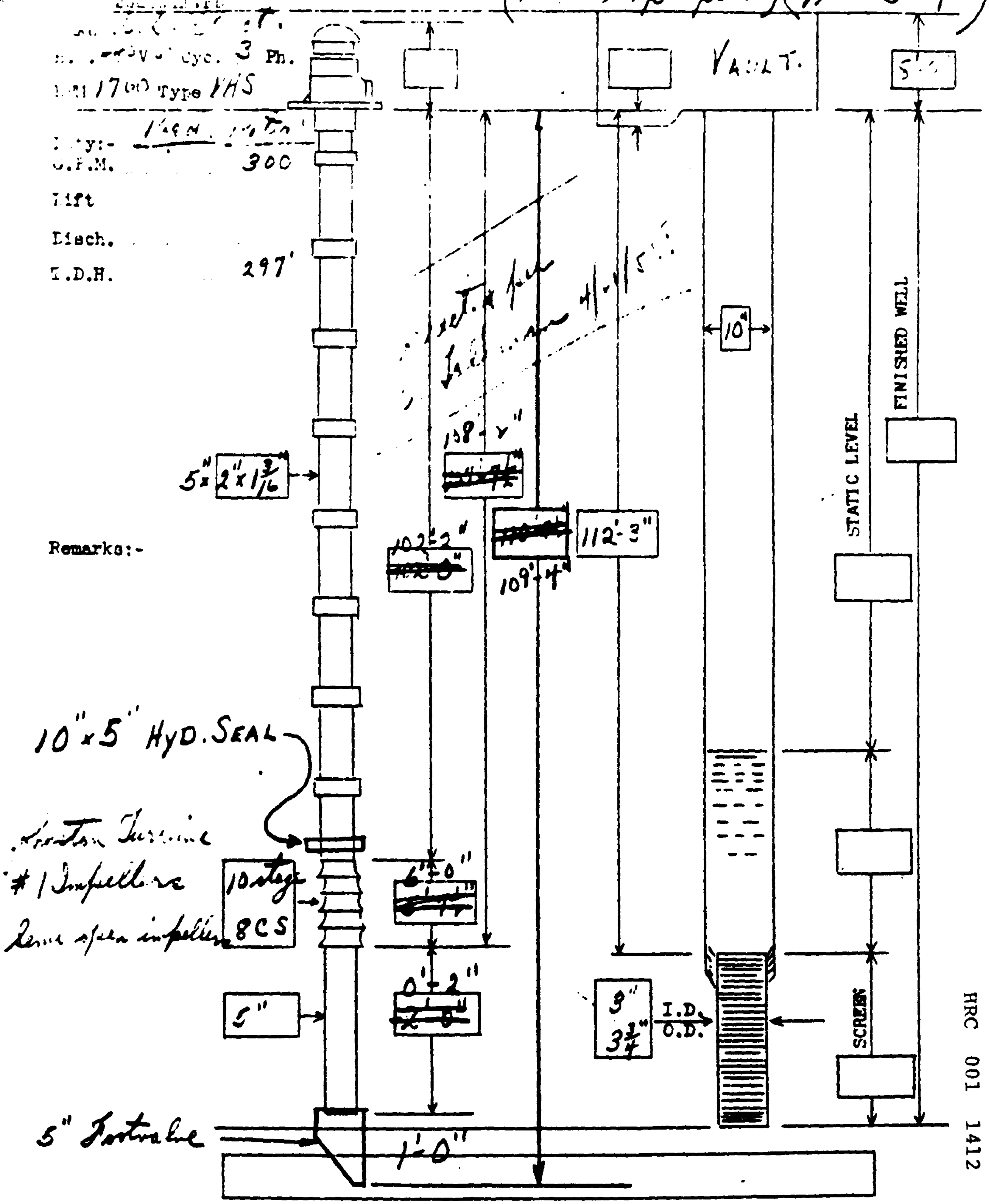
G.P.M. 300

Lift

Disch.

T.D.H. 297'

Remarks:-



HRC 001 1412

20

Well #2!

(#1 Repl) 3450

LY WELL LOG

WPCC No. [illegible]

RCA - Rubber Corp. of America Address New South Rd., Hicksville, N. Y.

Started 10/18/58 Completed 10/22/58 Driller Rybak, Tallman, Duncan

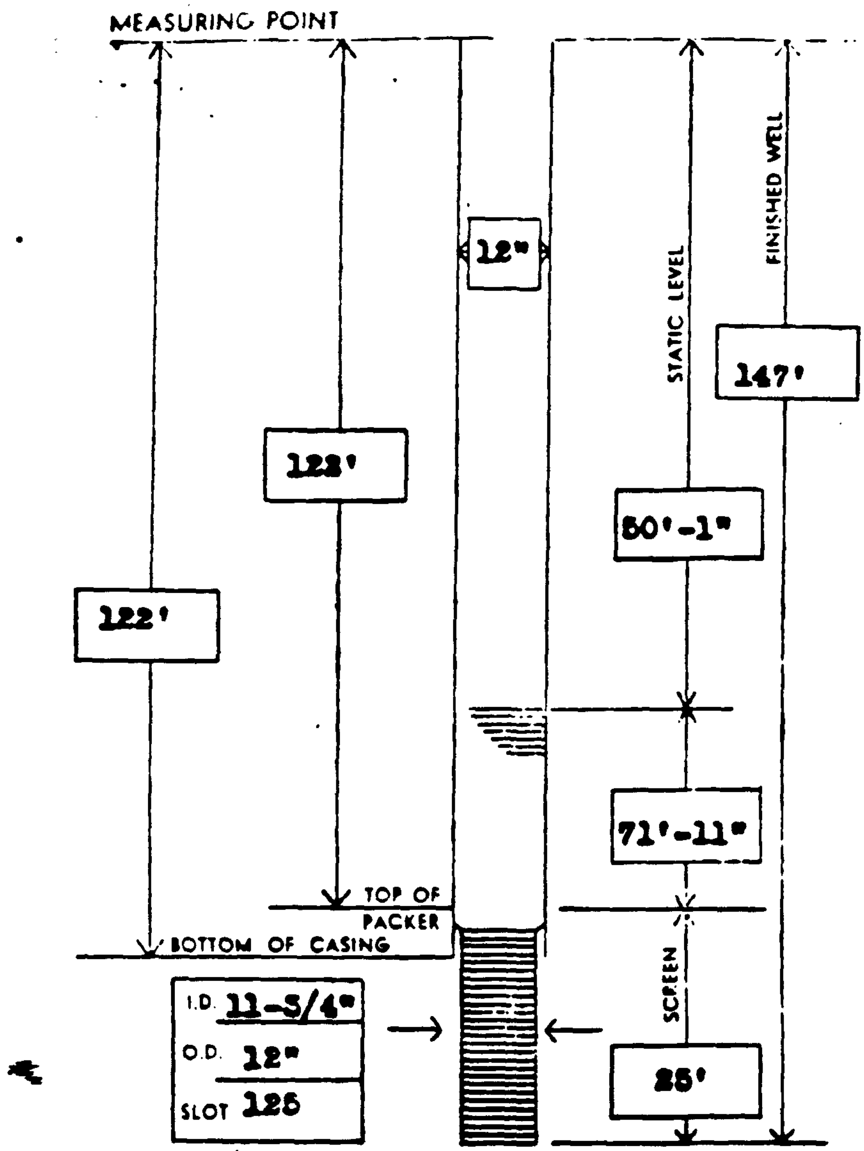
Diameter 40 x 12 in. Measured from Grade ☒ Yes ☐ No

Depth 147 Ft. in. Above Ft. In. Below Ft. In.

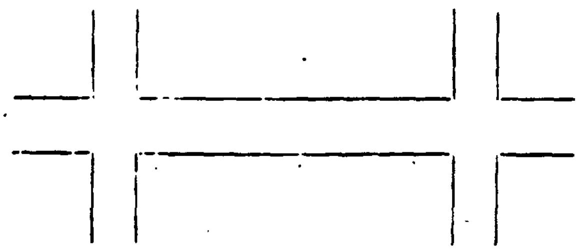
Sta. Level 80 Ft. 1 In. Elevation Ft.

SKETCH OF LOCATION	STRATUM THICKNESS	STRATUM DEPTH	TEMPERATURE SAND	TEMPERATURE WATER
Coarse brown sand, grits & gravel	38	38		
Fine and coarse brown sand, grits, gravel & hardpan	6	44		
Fine to coarse brown sand, grits & lumps of clay	10	54		
Fine to coarse brown sand & grits	3	57		
Fine brown sand, streaks of clay & mica	6	63		
Coarse brown sand, grits & mica	10	73		
Fine gray sand, lumps of clay	10	83		
Fine gray sand, lumps of clay	10	93		
Fine brown sand, lumps of clay, hardpan	12	105		
Fine brown sand - mica	20	125		
Fine brown sand - mica - some clay	5	130		
Fine red sand	5	135		
Fine brown sand & hardpan	3	138		
Fine brown sand	2	140		
Medium brown sand	2	142		
Fine brown sand - sandy clay	5	147		
Brown and gray sandy clay	8	155		

HRC 001 1414



SKETCH OF LOCATION



Show North Point

Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Type of Screen— Stainless steel twin louvre

NOTE — If outer casings are used state diameter, length and whether or not left in the ground.

NOTE — If screen is finished off with riser, give exact description of top of riser—(size and male or female thread.)

REMARKS— Screen is welded to bottom of 12" casing 40' rotated hole.
Top of gravel pack 47'.

HRC 001 1415

W405-7/53-3M

Op. 8AA Rubber Corp Date 12-13-55

Address New South Rd. Hicksville

GRADE LEVEL

Make U.S. Elect

3Ø H.P. 440V 60 Cyc. 3 Ph.

RPM 1760 Type VHS-NRR

Duty:- Reqd. Rated

G.P.M. 400 435

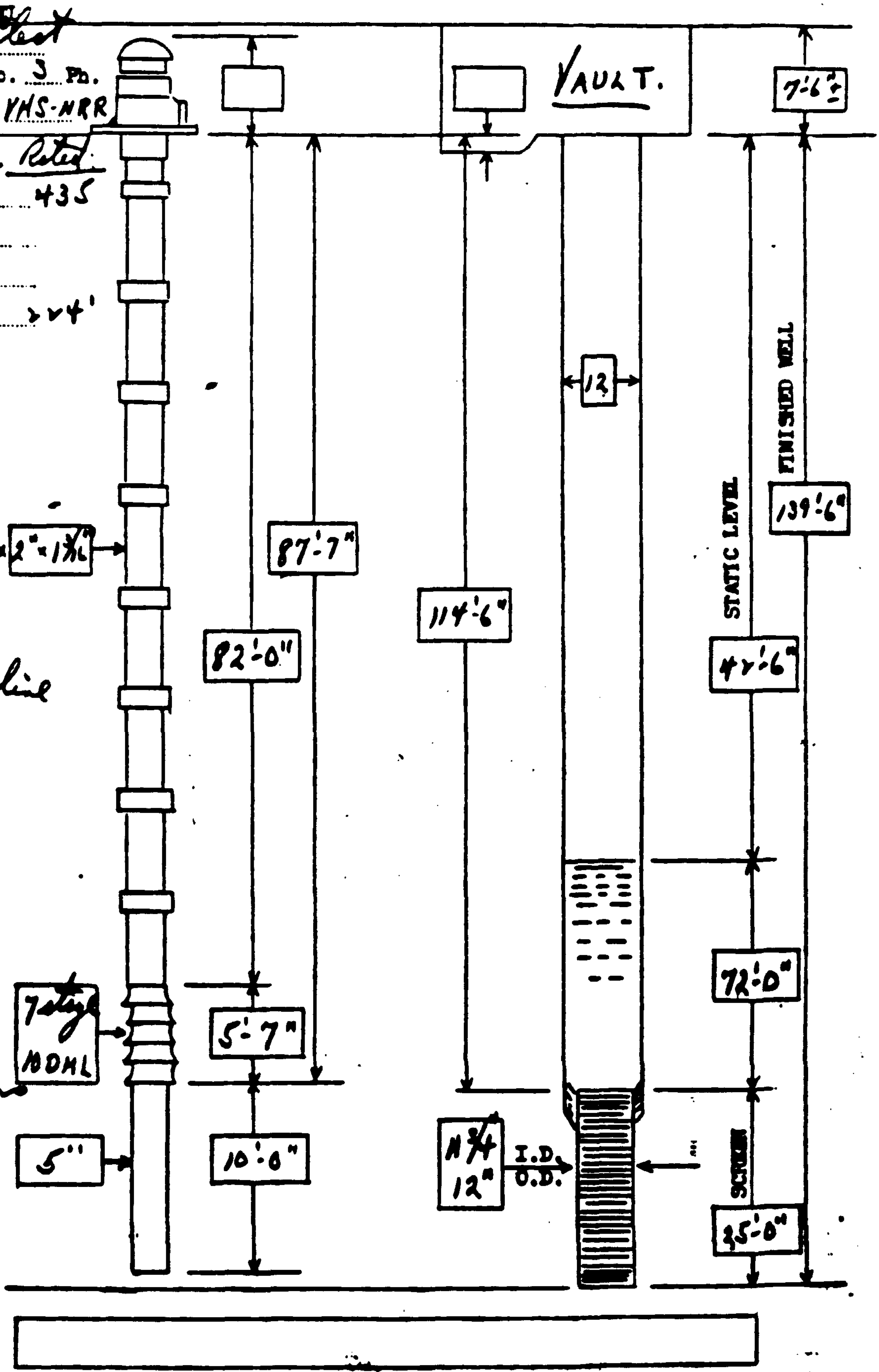
Lift 76'

Frict. 8'

0# - Disch. 139'

T.D.H. 223' 224'

5" 2"x1¾"



Remarks:-

Install 94' air line

L.S. Turbine

1 Impellers

in open impellers

HRC 001 1416

Well #3
5268

Y WELL LOG WPCC No. [illegible]

A - Rubber Corp. of America Address New South Rd., Hicksville, N. Y.

Started May 11, 1955 Completed May 14, 1955 Driller Feliciano Kollner

Size 40"x10"x8" in. Measured from Grade ☒ Yes ☐ No

Depth 150 Ft. In. Above Ft. In. Below Ft. In.

Level 55 Ft. In. Elevation Ft.

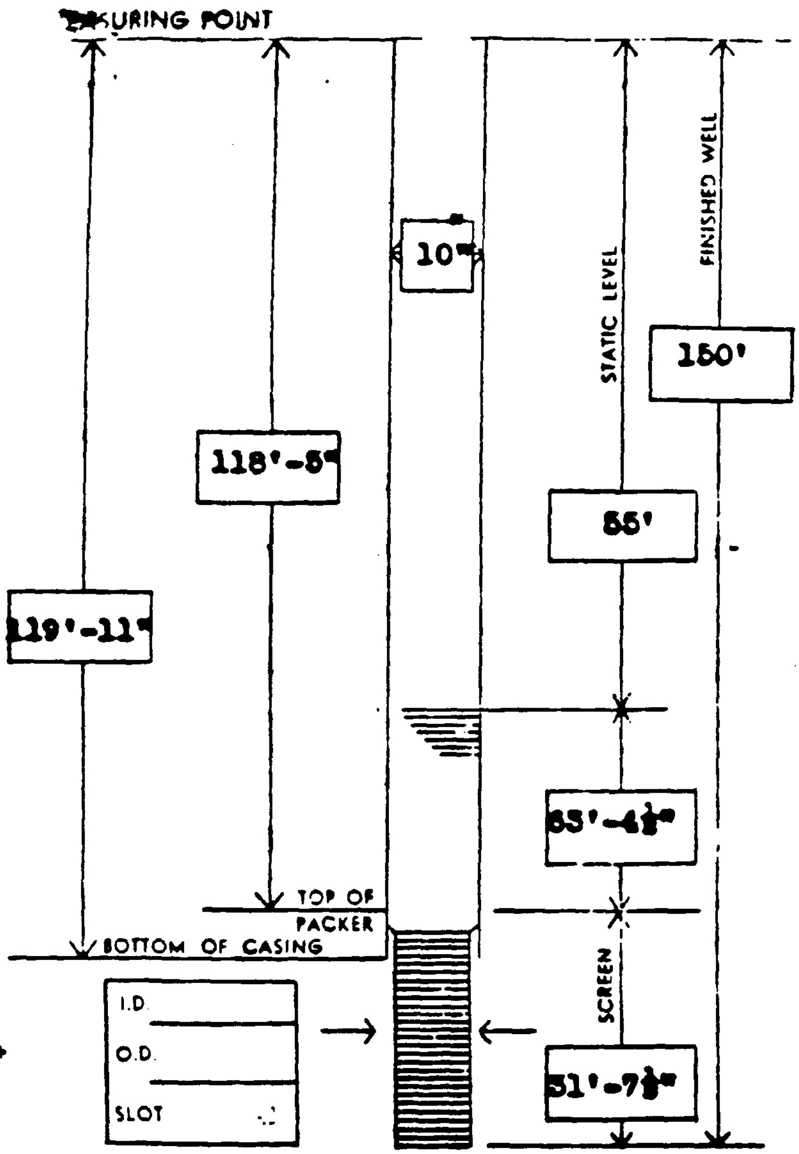
Description of Location	Stratum Thickness	Stratum Depth	Temperature Sand	Temperature Water
-5' Topsoil, fill and clay	5	5		
-17' Coarse brown sand, grits & gravel	14	17		
-40' Coarse brown sand, grits, gravel & hardpan	23	40		
-44 Medium brown sand & some sandy clay	4	44		
-46 Sandy grey clay	2	46		
-48 Fine brown sand & mica	2	48		
-54 Fine gray sand & mica	6	54		
-59 Fine multi-colored sand & mica	5	59		
-64 Fine brown sand & mica	5	64		
-67 Coarse sand, grits & clay	3	67		
-73 Sandy clay, mica, hardpan	6	73		
-80 Multi-colored sandy clay & mica	7	80		
-86 " " " " " "	6	86		
-95 Fine grey sand, some clay & mica	9	95		
-98 Fine grey sand, some clay	3	98		
-104 Fine sand, multi-colored clay & mica	6	104		
-106 Fine brown sand, clay, hardpan	2	106		
-117 Brown sandy clay & mica	11	117		
-123 " " " " "	6	123		
-126 Medium coarse brown sand, some clay	3	126		
-132 Fine brown sand, some clay, mica & hardpan	6	132		
-142 Fine brown sand, mica	10	142		
-144 Fine reddish colored sand & mica	2	144		
-146 Medium coarse gray sand, hardpan, sandy clay	2	146		
-152 Fine brown sand & mica	6	152		

NOTE — If outer casings are used...

NOTE — If screen is finished with riser, give exact description of riser

REMARKS —

HRC 001 1418



SKETCH OF LOCATION

Show North Point

Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Type of Screen 10

8" #15 slot

31' long with 10 x 8 packer

OTE — If outer casings are used state diameter, length and whether or not left in the ground.

OTE — If screen is finished off with riser, give exact description of top of riser—(size and male or female thread.)

EMARKS— Well located on north side of building.

HRC 001 1419

5A Rubber Corp. Date

ress Well #2 N5368

T E L EL

e U.S. E

P. 440 V 60 Cyc. 3 Ph.

1760 Type CFU

ty:-

.P.M. 400

ift

Disch.

T.D.H. 244'

Remarks:-

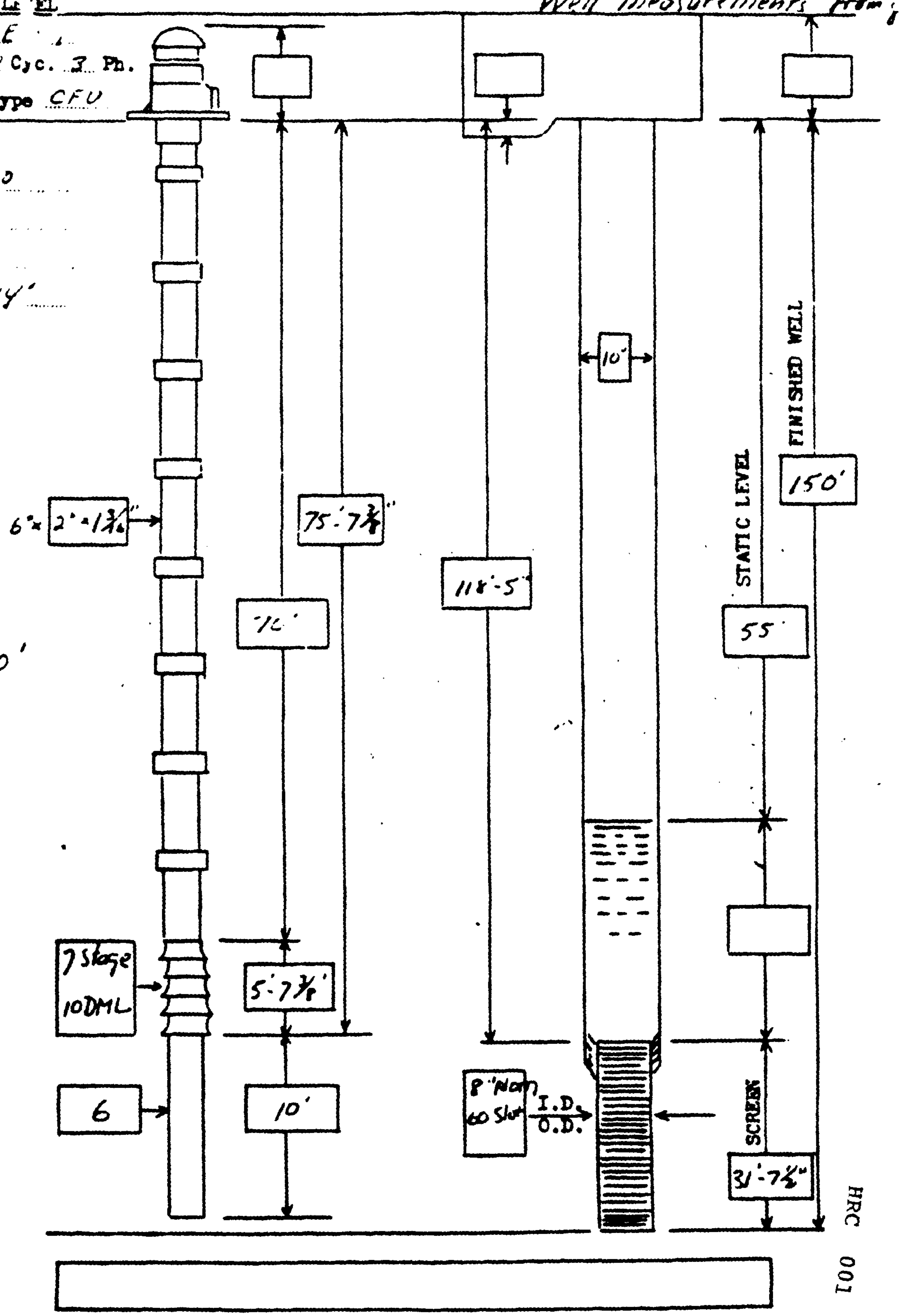
Line 70'

U.S. Bowls

Semi Open

Impellers

21 Impellers



S 287

HRC 001 1420

Insulan 5390

·ℒV WELL LOG

WPCC No. N-5390-

[illegible] Co.

Address: Near South Rd Hicks N.Y.

[S]tarted 10-24-55 Completed 10-27-55 Driller

[Diam]eter 12"X40' In.

Measured from Grade ☑ Yes ☐ No

[Dep]th 145 Ft. In.

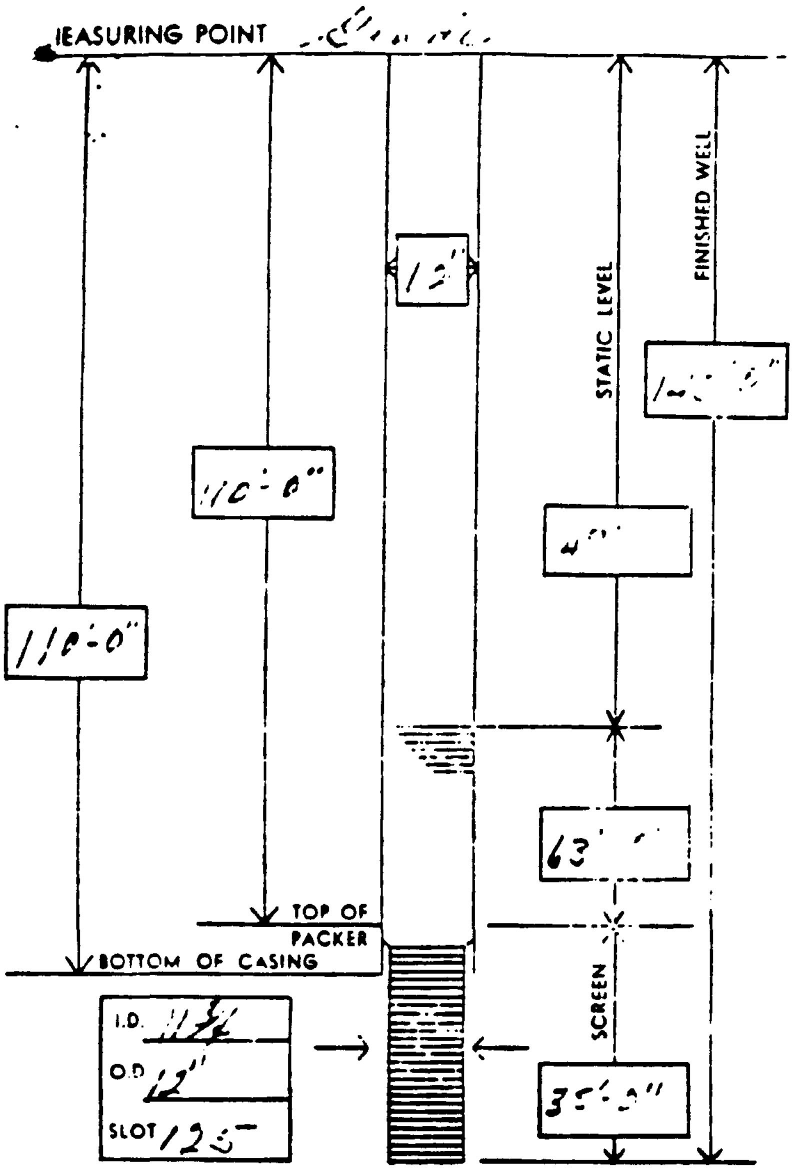
Above Ft. In. Below Ft. In.

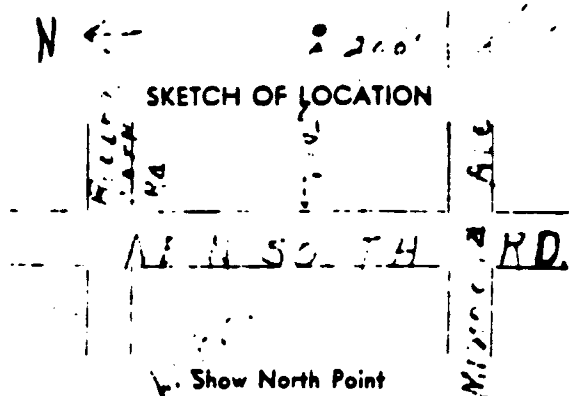
[Water] Level 47' Ft. In.

Elevation Ft.

	STRATUM		TEMPERATURE	
	THICKNESS	DEPTH	SAND	WATER
Loam & Top Soil	3	3		
Br Sd + Gravel	30	33		
Br Sd + Gravel Hard Pan	15	48		
Sdy Clay	3	51		
Br Sd + Br Sdy Clay	2	53		
Br Sd + Hard Pan	4	57		
Br Sd + Grits	2	59		
Solid Br Clay Sticky	16	75		
Solid Gray Clay + Pyrite	10	85		
Sticky Br Clay Traces of Pyrite	2	87		
Solid Br Clay, Some Pyrite	3	90		
Br Sd Hard Pan Some Clay	10	100		
Br Sd Mica Some Clay	10	110		
Med Red Sand + Mica	10	120		
Fine Br Sd + Multi Co Clay + Mica	3	123		
Br Sd Hard Pan + Multi Co Clay	4	127		
Br Sd Some Hard Pan + Mica	17	144		
Br Sd Multi Co Clay + Mica	11	155		
Br Sd + Very Little Clay	5	160		
Multi Co Solid + Sdy Clay	6	166		
Br Sd + Streaks of Sdy Clay	14	180		
Solid Multi Co Clay	10	190		

HRC 001 1422

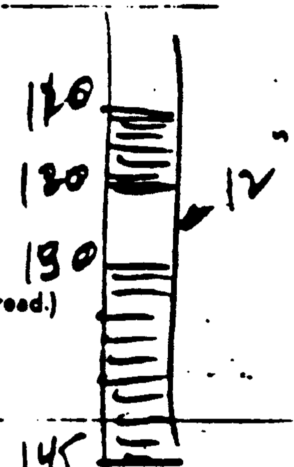




Show North Point

Locate well with respect to at least two streets or roads, showing distance from corner and front of lot.

Type of Screen— [illegible] - 125 Slot



NOTE — If outer casings are used state diameter, length and whether or not left in the ground.

NOTE — If screen is finished off with riser, give exact description of top of riser—(size and male or female thread.)

REMARKS— Top of Top [illegible] of Screen [illegible] - 120

10' of 12 3/4 Steel Pipe Blank 120' - 130'

Bottom Section of Screen 130' - 145'

Screen Blank + 12" [illegible] one Piece

40" RV Rotated [illegible] To 190' + Backfilled To 148'

Gravel Pack 50' To 148'

HRC 001 1423

Job M955 - [illegible] Date 9-28-61

Address near South Ford [illegible]

GRADE LEVEL

Make U.S. Elect.

30 H.P. 440 V 60 Cyc. 3 Ph.

RPM 1760 Type

Duty:- Reqd. Rating

G.P.M. 400 400

Lift 60

FRICT 3

Disch. 139

T.D.H. 201 244

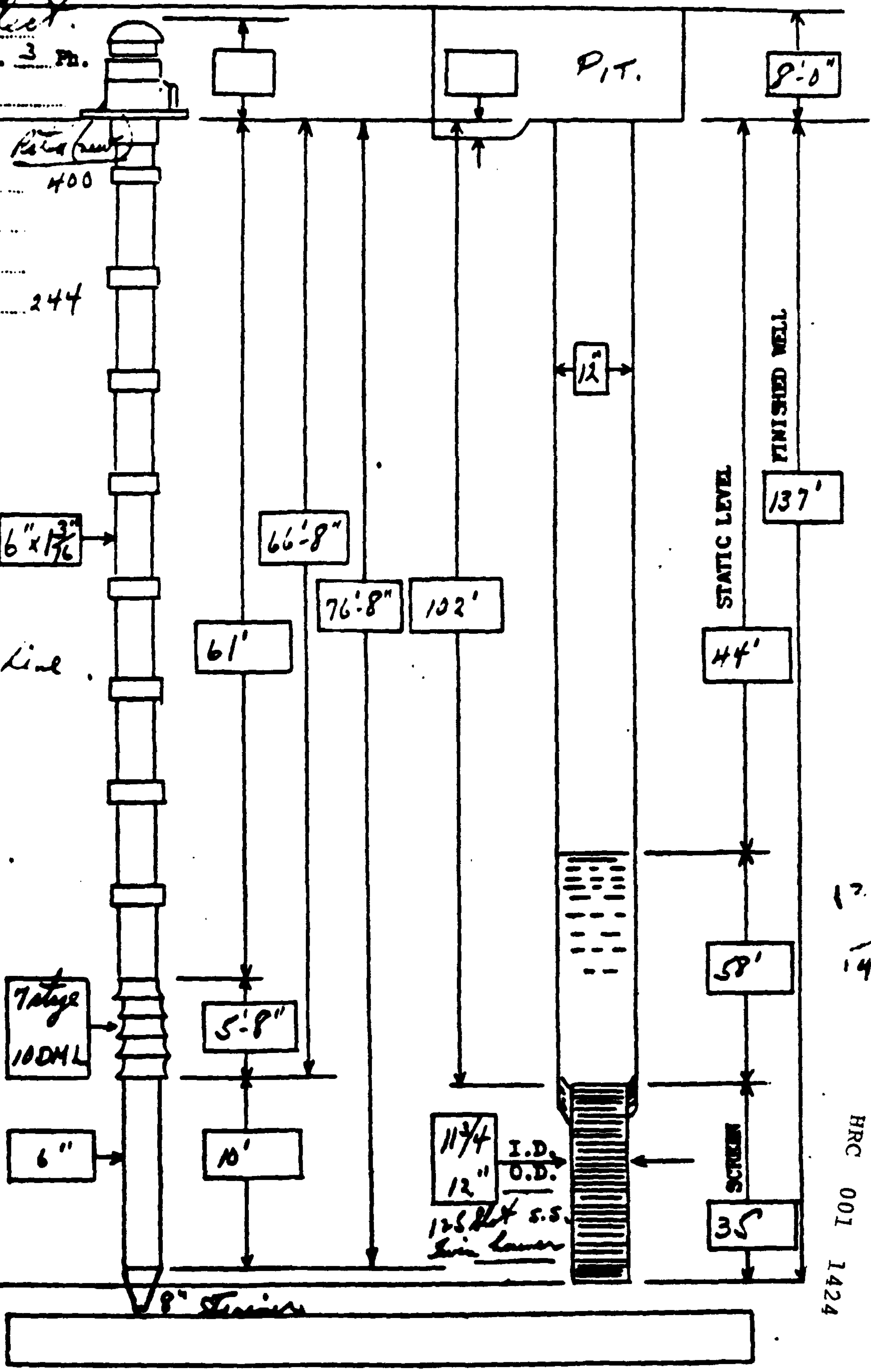
Water line

Remarks:-

Install 70' air line.

U.S. Bowls

Semi open impellers



HRC 001 1424

REPORT ON SURVEY OF CONSUMER PRODUCTS CONTAINING OR SUSPECTED OF CONTAINING HARMFUL ORGANIC CHEMICALS AND HAVING THE POTENTIAL OF CONTAMINATING THE GROUNDWATER OF NASSAU COUNTY, NEW YORK

MAY 1979

JOHN J. DOWLING, M.D., M.P.H., COMMISSIONER
NASSAU COUNTY DEPARTMENT OF HEALTH

ATTACHED

The chemical priority list (Table II), was developed based on information from the National Academy of Science's "Master List of Identified Contaminants in Drinking Water", January 6, 1976, the National Cancer Institute's position paper titled "Human Health Considerations of Carcinogenic Organic Chemical Contaminants in Drinking Water", April, 1978, and compounds found in Nassau County groundwater as identified by sampling.

Top priority was given to organic chemicals that were found in supply wells and listed as suspected carcinogens, suspected carcinogens or other harmful potential. Following these chemicals in priority were those organics not found in wells in measurable quantity but listed as possible carcinogens or otherwise harmful compounds.

Determination of Quantity Marketed

Several investigative approaches were attempted to determine the extent of use of those consumer products considered as potential contributors to groundwater contamination. As indicated in the product evaluation discussion, letters of inquiry were sent directly to the manufacturers of over 500 products of concern, requesting product ingredients and quantitative sales information. Many of the manufacturers responded that the sales information could not be provided. Several of those manufacturers that were able to provide quantitative sales data requested that the information be respected as confidential. The same results were experienced when letters of inquiry were sent to distributors.

The problem most frequently cited by manufacturers was that products were distributed in Nassau County by numerous companies and that each company most probably also distributed the product in areas other than Nassau. Therefore, it appeared that unless a manufacturer distributed his own products, he was unaware of their ultimate destination. Since there existed an alternate means of obtaining the quantitative information needed, i.e. surveying Nassau's retail establishments about their sales volumes, the manufacturer and distributor approach was not pursued further. The survey method also allowed for verification of data received from some manufacturers and distributors and enabled the Department to have non-confidential data to report.

Organic Solvent Cesspool Cleaners - Market Survey

Of the several categories of products chosen to be surveyed, priority was given to organic solvent cesspool cleaners and drain openers because of their almost direct discharge into the groundwater and the suspicion that they were sold in large volumes in unsewered areas of the County. The survey (2) indicated an estimated yearly sales volume of 76,500 gallons of organic solvent cesspool cleaning and drain opening products. A breakdown of the types of chemicals used in these products was as follows:

HRC 001 1426

Chemical	Quantity* (Gallons/Year)
Methylene Chloride	17,400
1,1,1 Trichloroethane	18,600
Orthodichlorobenzene	2,000
Other aromatic and halogenated compounds	21,750
Total suspected carcinogenic or other harmful organics	59,750
Petroleum Distillates	6,000
Inert or undetermined chemicals	10,750
Total	76,500 Gallons/Yr.

Because of the concern over such large quantities of organic chemicals being discharged to the groundwater yearly from this product source and the realization that it would take about six years for all presently scheduled sewerage systems within the County to be completely operational, this information was evaluated and reported to the New York State Attorney General's Office for assistance in the development of control measures over the manufacture, sale and use of such products in the State.

Other Market Surveys

A survey on the sale of household cleansing agents was conducted in the same manner as the cesspool cleaner survey. Information regarding the sale of selected household disinfectants, laundry degreasers, solid toilet bowl deodorizers and oven cleaners was requested from all of the County's department stores, supermarkets, and sanitary supply companies. This mail survey was returned by 46 percent of the stores.

Due to time and manpower restrictions, it was necessary to limit the number and scope of the remaining market surveys. Products surveyed were limited to paint and varnish removers, solvents and cleaning agents, engine and metal degreasers, and driveway and garage degreasers. The field survey team visited and interviewed 84 establishments (18 percent) from the total number of hardware, department and automotive supply stores. Emphasis was placed on the stores located in unsewered areas of the County.

A summary of the quantities of harmful organic chemicals found in products used in Nassau County is given in Table III. Based on responses to market surveys- (approximately 32 percent), it was found that a minimum of 93,000 gallons of organic chemicals listed as carcinogens, suspected carcinogens or other harmful potential (10, 11), are being sold yearly in the County. Extrapolation of this amount to include the entire County yields an estimated total of 288,000 gallons per year of these potentially harmful organic chemicals of concern being used by consumers in Nassau.

(* quantities updated to September 1978)

Evaluation of Deleterious Impact on Groundwater Quality

It is difficult to determine the quantity of chemicals actually being discharged into the groundwater from consumer product sources. Some types of products such as solvents and paint removers are not intended to be used in a manner which would result in chemical discharge into household sewerage systems, and other products such as driveway and garage degreasers or car cleaners only run off and evaporate or are being washed into storm drains. Considering these parameters and allowing for the operation of sewers in large areas of the County, it is somewhat arbitrarily estimated that 10 percent of the quantities of all product categories except cesspool cleaners are discharged to the ground.

Taking 10 percent of the quantities of chemicals of concern found in all major product categories and 100 percent of the chemical quantities from the cesspool cleaning products yields an estimate of nearly 83,000 gallons of organic chemicals of suspected carcinogenicity or other harmful potential being discharged yearly to the groundwaters of Nassau County.

A sample taken from cesspool waste scavengers represented domestic wastes collected from four separate residences. This sample had high levels of 1,1,1 trichloroethane (630 ppb) and a lesser amount of chloroform, (80 ppb). An attempt was made to identify which residence(s) contributed the high level of organics to the sample and what possible commercial substances were used by the homeowner(s) that might be responsible for the presence of organics. Only one of the homeowners could be reached for questioning and it was ascertained that a commercial cesspool cleaning compound had been used approximately one year prior to the cesspool pumpout.

From the information obtained, it could not be determined that the cesspool cleaning compound was responsible for the high level of organics detected in the residential sample. However, the presence of volatile organics in high levels confirms the premise that consumer products are being released to the domestic sewerage system and are not being consumed nor evaporated entirely by their usage.

Testing of Public Supply Wells

A comprehensive investigation of contamination of the County's groundwater by organic chemicals was initiated in November, 1976. Until recently, laboratory capabilities only allowed for analysis of approximately 15 volatile halogenated and non-halogenated organic constituents. County and State laboratories were unable to routinely test for several chemicals which are commonly found in many consumer products, such as methylene chloride, ortho and para-dichlorobenzene, methyl ethyl ketone, butyl cellosolve, napthenes and acetone, all of which are listed in the NIOSH registry of suspected carcinogens (11).

The present testing is being reviewed for modifications to accommodate analysis for these chemicals. This will enable the Department to monitor drinking water for their presence and determine whether the consumer products containing these chemicals pose a potential environmental hazard. Presently, the products containing these chemicals are only "suspected" of contributing to groundwater contamination, based on the volume of their usage.

TABLE II

Priority List of Chemicals

Nassau County Department of Health

Priority I - Found in wells and listed as:

A. Carcinogenic or harmful compound

B. Possible carcinogenic or harmful (NAS List)

1. A - Vinyl chloride (chloroethylene)
2. B - Dichloroethylene
3. B - Trichloroethylene
4. B - Chloroform
5. B - Toluene
6. B - Benzene
7. B - Bromodichloromethane
8. B - Carbon tetrachloride
9. B - Methylene chloride
10. B - Dibutylphthalate
11. B - Tetrachloroethylene

Priority II - Not Found in wells in measurable quantity but listed as possible carcinogenic or harmful compounds.

1. Benzopyrene
2. 2,4-Dichlorophenol
3. 2,4-Dimethy phenol
4. Bis (2-Chloroethyl) ether
5. Pentachlorobiphenyl
6. Tetrachlorobiphenyl
7. Trichlorobiphenyl
8. Carbon disulfide
9. Acetaldehyde
10. Bis-(2-Chloroisopropyl) ether
11. Diphenylhydrazine
12. 2,4,6-Trichlorphenol
13. Styrene
14. 2,4-dichloromethylphenol
15. Methyl methacrylate
16. Methyl stearate
17. Dichlorodifluoroethane
18. Bromoform
19. Chlorodibromomethane
20. 1,2,4-Trichlorobenzene
21. Pentachlorophenol
22. Chlorobenzene*
23. Crotonaldehyde
24. Hexachloroethane
25. Isodecane
26. Nonane

TABLE II Cont'd.

27. Propylbenzene
28. 1,1,1,2-Tetrachloroethane
29. Trimethylbenzene
30. Xylene- (o,m,p dimethylbenzene)
31. Chloral
32. di-(2-ethyl hexyl) phthalate
33. Dichloroiodomethane
34. di-n-octyladipate
35. Nicotine
36. Phenylacetic acid
37. t-butyl alcohol
38. Bromobenzene
39. Bromochlorobenzene (o,m,p)
40. Butyl bromide
41. e-caprolactum
42. 1,2-bis(-chloroethoxy)ethane
43. Chloroethyl ethyl ether
44. 2-Chloroethyl methyl ether
45. Chlorohydroxybenzophenone (All substances in 1 ring)
46. Chloromethyl ethyl ether
47. m-chloronitrobenzene
48. 1-chloropropene
49. Cyanogen chloride
50. Dibromobenzene
51. Dibromodichloroethane
52. 1,3-Dichloropropene
53. 1,1-Dichloro 2-haxane
54. Dichloropropane (all isomers)
55. 1,2-Dimethoxybenzene
56. 4,6-Dinitro-2-aminophenol
57. Hexachloro-1,3-butadiene
58. Hexachlorophene
59. o-Methoxyphenol
60. Methyl chloride
61. Oxtyl chloride
62. Pentachlorophenyl methyl ether
63. Phthalic anhydride
64. 1,1,3,3-Tetrachloroacetone
65. Trichlorofluoromethane

Priority III - Found in wells but not listed as suspected carcinogenic compounds:

1. Napathalenes
2. Methyl Napthalene
3. Dimethyl Napthalene
4. Ethyltoluene
5. C Benzenes
6. Fluorene (diphenyl methane benzidene)
7. Octyl phenols
8. Trichlorotrifluoroethane
9. Ethyl ether

hooker RUCO DIVISION

NEW SOUTH ROAD, HICKSVILLE, NEW YORK 11802
PHONE (516) 931-8100

Jan. 5, 1977

Mr. John F. Welsch
Nassau County Department of Health
Bureau of Water Pollution Control
240 Old Country Road
Mineola, N.Y. 11501

Dear Mr. Welsch:

On 11/29/76 you wrote our Mr. Philip DeVries, requesting an update list of chemicals purchased and used by Hooker at the Hicksville plant. You requested this information in the form of an update, and also over the last seven years.

In response to your request, we are supplying you with lists of chemicals purchased and used at Hicksville as follows:

a. Raw materials used by the Chemicals & Plastics Group RUCO Division, Hicksville, 1970,

b. Raw Material Requirement, Hooker Chemical/RUCO Division, Hicksville plant, calendar year 1971,

c. Raw Material Requirement, Hooker Chemical/RUCO Division, Hicksville plant, calendar year 1972,

d. Raw Material Requirement, Hooker Chemical/RUCO Division, Hicksville plant, calendar year 1973,

e. Raw Material Requirement, Hooker Chemical/RUCO Division, Chemical Business Area, calendar year 1974,

f. Raw Material Requirement, Hooker Chemical/RUCO Division, Chemical Business Area, calendar year 1975,

g. Raw Material Requirement, Hooker Chemical/RUCO Division, Chemical Business Area, calendar year 1976,

h. Hicksville Dry Blends plant, Raw Materials Used 1973, 1974, 1975, 1976.

Sincerely yours,

J. B. Harrison
Plant Manager

Enclosures
sg/MA-3089-7

HRC 001 1432

h.

HICKSVILLE
DRY BLENDS PLANT
RAW MATERIALS USED 1973, 1974, 1975, 1976

RAW MATERIAL DESCRIPTION:

3158 Tenneco Resin (C155)
B-255 (600) Resin
B-221 (855) Resin
B-303 (500) Resin
Irvinol 537 Resin
Kane Ace B22
Aldo MS. (Grocar 6000)
Hoechst Wax E
Glycolube PC
2% Zirs Toner
LM 8074 (Synpron 1011, LM 180)
Barium Stearate (Synpron 160)
Acrawax C
Raven 1035 (Regal 300, N219, 999 Powder, Superba)
K 120 ND
K 120 N (Supercryl 100)
TiO_2
Calcium Stearate
XL 165 (Rosswax 165, Aristowax 165)
AC 629A
K 125
Oxylite 95 T
Amber Tint
Oxybsh
T-31
T-20
Poly Flo PVN
CC 7500
CC 10
KM 229
Rhodoviol
Kane Ace PA 20
Vinylube 56
Synpron 1337
Drapex 6.8
DOP
Lubrol TSC
Irvinol 540 & 640 Resin
B-202 Resin (Tenneco 108)
Glycolube 200
Geon 654
DVM
Synpron 1135
Tinuvin P
KM 323B
DR AVI 47
Mark 906
Mark 1500

HRC 001 1433

Therm 813
Therm 831
Fwarcost 2801
Ca el St.t.
Mark 727
540-1
550-2
65% Rutile
 3% Black 0
Toner BB 101 P
G-62 (Vikoflex 7170)
Calcium Zinc Toner
Mark 996
Mark 1500
1% Zirs
Stantone D1005
Irvinol 650
CPE 3614
Cab-O-Sil
Tifure R-101
KM 229
T 106
Advawax 140
B-342 Resin
K-21442
Esceflex 150
Nvostab V982
Mark 292
Mark 583
B-28 Resin
Synpron 768
Celogen AZ
FDA Toner
DINP
Mark 88
Mark C
Stearic Acid
B-341 Resin
EP-8
EP-0
Drapex 4.4
Ultra Marine Blue
PG-100
PFB 100
Fintote Plast.
Staflex 626
VC-111
DIOP

HRC 001 1434

a.

HOOKER CHEMICAL & PLASTICS GROUP

RUCO DIVISION Hicksville

1970

Raw Material Description

Chem 233 2-Ethyl Hexanol
Chem 1002 Perchlorethylene
Chem 1003 Phthalic Anhydride
Chem 1004 Iso Octyl Alcohol
Chem 1008 Adipic Acid
Chem 1010 Butyl Alcohol
Chem 1015 Triethylene Glycol
Chem 1022 Iso Decyl Alcohol
Chem 1032 Fumaric Acid
Chem 1033 Maleic Anhydride
Chem 1055 Tri Decyl Alcohol
Chem 1060 Ethylene Glycol
Chem 1061 1, 4 Butanediol
Chem 1074 Methyl Amyl Alcohol
Chem 1093 Methylene 2208
Chem 1094 Methylene 2209
Chem 1102 Iso Phthalic Acid
Chem 1117 Trimellitic Anhydride
Chem 1120 Hylene TM
Chem 1122 Cellulose Acetate Butyrate
Chem 1124 Ethyl Acetate
Chem 1125 Toluol
Chem 1129 Glycol Blend
Chem 1138 Azelaic Acid
Chem 1145 Alfol 610
Chem 1149 Di Methyl Formamide
Chem 1152 Isopropanol
Chem 1164 Di Iso Butyl Carbinol
Chem 1177 Groco 6 Oleic Acid
Chem 2042 1, 6 Hexane Diol
Chem 2043 Iso Butyl Alcohol
Chem 2044 Multrathane M
Chem 2056 Alfol 810

HRC 001 1435

JOKER CHEMICAL & PLASTICS GROUP

RUCO DIVISION

1970

Raw Material Description

Chem 2061 Neopentyl Glycol
Chem 2062 Diethylene Glycol
Chem 2074 Nylene W
Chem 2083 Mondur TD 80
Chem 2209 Methyl Cellosolve
Chem 2257 N Propanol
Soil 113 Xylol
Soil 131 Methyl Ethyl Ketone

RESIN
Chem 1 Vinyl Chloride
Chem 2 Trichlorethylene
Chem 8 Vinyl Acetate

LATEX
Chem 25 Styrene
Chem 26 Butadiene
Chem 35 Dresinate 731

DRY BLEND & PELLETS
Syn 965 VC-65 Resin
Syn 966 Blacar 384 or VC-113 Resin
Syn 971 VC-95 Resin
Syn 986 VC-80 Resin
Syn 994 Acryloid K 120-N
Syn 998 C-155 Rucon Resin
Syn 1007 Kane Ace B-12
Syn 1008 B-28 Rucon Resin
Syn 1009 B-22 Rucon Resin
Syn 1013 B-20 Rucon Resin
Syn 1016 B-34 Rucon Resin
Syn 1048 KM-636

HRC 001 1436

HOOKER CHEMICAL & PLASTICS GROUP

RUCO DIVISION

·1970

Raw Material Description

DRY BLEND & PELLETS (cont'd.)
Chem 1160 Advawax 140
Chem 2053 Adol RP Glycolube
Chem 2069 M & T 831
Chem 2119 M & T 813
Chem 2020 TM 918*
Chem 2081 RO 37*
Chem 2178 Mark 1197

6.

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-HICKSVILLE PLANT
CALENDAR YEAR 1971

CODE #	Material Description
Chem 1	Vinyl Chloride
5	Lauroyl Peroxide
7	Gelatin
11	Acetic Acid
25	Styrene Monomer
26	Butadiene
27	Potassium Persulfate
28	Dodecyl Mercaptan
29	Dresinate 208 70%
35	Dresinate #731
37	Methocel 65 HG 50 C.S
39	Potassium Chloride
41	Di Vinyl Benzine
154	Aqua Ammonia
159	Formaldehyde 40%
163	Oleic Acid
166	Potash Caustic Flake
175	Triethanolamine
197	Silicate of Soda
228	Tetra Ethanol Ammonia
233	2-Ethyl Hexanol
1001	Toluene Sulphonic Acid
1002	Perchlorethylene
1003	Phthalic Anhydride
1004	Iso-Octyl Alcohol
1008	Adipic Acid
1010	Butyl Alcohol
1015	Triethylene Glycol
1016	Stabilizer 13-V-5HA
1022	Iso Decyl Alcohol
1023	Bisphenol "A"
1032	Fumaric Acid
1033	Maleic Anhydride
1035	Pelargonic Acid
1055	Tri Decyl Alcohol
1056	1,3 Butylene Glycol
1060	Ethylene Glycol
1061	1,4 Butanediol
1066	Glycerol
1072	Thermolite #12
1080	Neofat #16
1082	Bicarbonate of Soda
1093	Methyl Caprylate
1094	Methylene 2055
1102	Iso-Phthalic Acid
1117	Trimellitic Anhydride
1119	Tri Methylol Propane
1120	Xylene T K
1121	Cellusolve Acetate
1122	Cellulose Acetate Butyrate
1124	Ethyl Acetate
1125	Toluol
1126	Propylene Glycol
1127	Stannous Chloride
1129	F.M. 3366 Glycol Blend

HRC 001 1438

	1144	Tetra Isopropyl Titanate
	1145	Alfol-G-10 Alcohol
	1149	DiMethyl Formamide
	1152	Isopropanol
	1158	Acrawax C
	1160	Advawax 140
	1162	Hoechst Wax E
	1164	Di Iso Butyl Carbinol
	1198	Synpron 160
	2020	T M 918
	2026	Stabilizer 8-V-1
	2042	1,6 Hexanediol
	2043	Iso-Butyl Alcobol
	2044	Multrathane 17
•	2046	S-101 Polyester
•	2047	S-102-160 Polyester
•	2048	S-103 "
•	2049	S-105 "
	2050	S--106 "
	2053	Aldo R. P.
	2056	Alfol 810
	2061	Neopentyl Glycol
	2062	Diethylene Glycol
•	2066	S-1019-75 Polyester
	2069	T-831
	2070	1,2,6 Hexane
	2073	Poly G-1020 P Diol
	2074	Hylene W
	2081	Tin Stabilizer R-037
	2101	Sarkosyl L
•	2104	CO-75 Polyurethane
	2114	Tetra Hydro Furan
•	2115	CO--77 Polyurethane
	2119	M & T 813
	2122	Poly G 630 P
	2130	Cab Interm Sol.
	2142	Cymel 301
	2143	Morpholine
	2156	1010 Catalyst
•	2175	S-102-70 Polyester
•	2176	S-1015--135 "
	2180	Thermolite T-9
•	2182	M D I Stearate
•	2183	T D I Stearate
•	2185	R-109-300 Polyester
	2192	C S Grade Talc
	1133	Stabilizer Synpron 512
MAIN	-0	Water
	1	Revertex
	2	B. Revertex
	20	Neoprene Latex Type
•	64	Regular Concentrate
•	83	Type 2000
•	85	Type 1009
•	86	Type 2000 L
EX	307	Clay - Ordinary
	372	Hyflo Super-Cel
DAB	254	Darvan #1
	256	Emulphor
	259	Nekal BA 75
	271	Aquarex MDL Paste
	285	Darvan #7
	286	#955 Casein
	287	Marasperse

-1

DAB	288	Blanicol N
COLL	632	Gum Arabic
	701	Methocel 100 Cps.
	702	Acrylsol G S
	709	Methocel 8000
DODE	611	Water Soluble Deodorant
VULC	10	Neozone D
	20	Zinc Oxide #15
	55	Zenite Special
	56	AA-2246 Antioxicent
	76	Tetrone A
	78	Setsit #5
	83	Arazate (Powder)
	85	2,5 Ditertiary Butyl
	88	Super fine Flour Sulfur
	89	Vandex
KEEP	755	Sowicide G
PIG	578	Continex S R F
	538	Red - 30
	696	Darco K B
	1334	Vinylized Linting Violet
	1362	Black C.F.
	1376	Superba Black
	1403	Nuchar C N
	1441	Mogul A
	1476	Titanox A 168 LO
	1529	10% Lakolene Violet
SOIL	113	Xylol
	131	Methyl Ethyl Ketone
*	847	D I O P Plastersizer
*	863	Plasticizer TG-8
	868	Experimental Wax Blend
	937	Caster Oil
SYN	500	Blend of 50% Syn 90C
	918	Geon 121
	966	VC - 113
	994	Acryloid K-120 N
	1000	VC-111
*	1005	E--10858
	1007	Kane Ace B-12
**	1008	B--28 Ricon Resin
**	1009	Ricon B-22 Resin
	1013	GB-6010 Resin
	1047	Kurcha BTA III S
TOTALS		

HRC 001 1440

C.

- 1 -

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-HICKSVILLE PLANT
CALENDAR YEAR 1972

Code #	Material Description
Chem 1	Vinyl Chloride Mono.
2	Trichlorethylene
5	Lauroyl Peroxide
7	Gelatin
8	Vinyl Acetate
25	Styrene Monomer
26	Butadiene
27	Potassium Persulfate
28	Dodecyl Mercaptan
35	Dresinate 731
37	Methocel 65 HG-50 CPS
39	Potassium Chloride
41	Divinyl Benzene
154	Aqua Ammonia
159	Formaldehyde 40%
163	Oleic Acid
166	Potash Caustic Tech.
175	Triethanolamine
197	"KV" Selicate of Soda
228	Tetra Ethanol Ammon.
233	2-Ethyl Hexanol
1001	Toluene Sulphonic
1002	Perchlorethylene
1003	Phthalic Anhydride
1004	Iso-octyl Alcohol
1005	Adipic Acid
1015	Triethylene Glycol
1016	Dibutyl TinDi laurate
1020	Neofat #16
1022	Iso-Decyl Alcohol
1023	Bisphenol "A"
1032	Fumaric Acid
1033	Maleic Anhydride
1035	Pelargonic Acid
1055	Tri Decyl Alcohol
1060	Ethylene Glycol
1061	1,4 Butanediol
1066	Glycerol
1074	Methyl Amyl Alcohol
1082	Bicarbonate of Soda
1093	Methyl Caphylate

HRC 001 1441

	1094	Methylene 2855
	1097	BC-100
	1102	Iso-Phthalic Acid
	1112	BC - 700
	1117	Trimellitic Anhydride
	1121	Cellosolve Acetate
	1122	Cellulose Acetate But
	1124	Ethyl Acetate
	1125	Toluol
	1127	Stannous Chloride
	1129	P.M. 3866 Glycol Bl.
	1144	Tetraisopropyl Titan.
	1145	Alfol- 610 Alcohol
	1149	Di Methyl Formamide
	1152	Isopropanol
	1158	Acrawax C
	1164	Di-Iso Butyl Carbinol
	1170	Mondur S
	1181	Topanol CA
	1187	Multrathon R-74
	1198	Synpron 160
	2026	Stabilizer 8-V-1
	2042	1,6 Hexandediol
	2043	Iso Butyl Alcohol
	2044	Multrathane M
*	2046	S-101-55 Polyester
*	2047	S-102-160 "
*	2048	S-103 "
*	2049	S-105 "
*	2050	S-106 "
*	2051	CO-20-S Polyurethane
	2056	Alfol 810
	2061	Neopentyl Glycol
	2062	Diethylene Glycol
	2065	Stabaxol I
*	2066	Polyester S-1019-75
	2074	Hylene W
	2083	Mondur TD 80
	2114	Tetra Hydro-Furan
	2117	1,4 Cycohexanedimeth.
	2141	T-18
	2142	Cymel 301
	2143	Morpholine
	2156	1010 Catalyst
	2165	Iso Nonyl Alcohol
	2183	T D I Stearate
*	2186	S-103-35 Polyester
*	2191	S-1021-110 Polyester
	2192	C S Grade Talc
*	2159	S-502 Polyester

HRC 001 1442

	2196	Chemetron Wax 100
	2198	Di Ethylamine
*	2200	S-1011-35 Polyester
*	2201	F-101-60 "
	2203	T M D I
	2203	L-45 Silicone
	2208	1,6 Hexamethylene
	2209	Methyl Cellosolve
	2211	Myristyl Helene W
	2214	Carstan 8
	2215	Carstan 18
*	2221	R-101-110 Polyester
*	2226	S-105-40 "
*	2227	S-1015-120-220 "
*	2229	XL 2268 L Prepolymer
*	2231	20% M T S A
	2233	Surfactant 1165 G.E.
*	2237	S-1023-20 Polyester
	2239	Recinoleic Acid
*	2242	S-105-75-150 Polyester
*	2243	S-1021-70-150 "
*	2244	S-1019-75-200 "
*	2248	S-102-40-150 "
*	2249	S-105-55-78 "
*	2250	S-102-70-180 "
	2256	Cyclohexane Bi Methy
	2257	N-Propanol
*	2273	S-1019-15 & S-1019-55
MAIN		
	0	Water
	1	Revertex
	2	60% Natural Latex
	20	Neoprene Latex
EX		
	307	Clay-Ordinary
	372	Hyflo Sper-Cel
DAB		
	254	Darvan
	256	Emulphor
	259	Nekal BA 75
	271	Aquarex MDL Paste
	286	#955 Casein
	287	Maraspserse
	288	Blancol N
COLL		
	682	Gum Arabic
	701	Methocel 100 Cps.

	702	Acrylsol G S	122
	708	Ludox Calloidal Sill.	36,912
	709	Methocel 6000	17
RODE			
	611	Water Soluble Deod.	13
VULC			
	10	Neozone D	1
	20	French Proces Zinc O.	346
	55	Zenite Special	60
	56	AA-2246 Antioxident	135
	76	Tetrone A	122
	83	Aranate (Powder)	21
	85	2,5 Ditertiary Btuyl	33
	86	Super Fine Flour Sul.	119
	89	Vandex	17
MAIN			
*	92	Type 2000 L (A-49)	714,587
*	93	Type 2000 (A-53)	177,303
*	100	Type 1009 (A-64)	616,140
KEEP			
	755	Sowicide G.	50
PIG			
	578	Continex S R F	126
	588	Red-30	82
	696	Darco A B	27,219
	1362	Black C F	699
	1376	Superba Black	12,600
	1403	Nuchar C N	24,915
	1441	Mogul A	7,380
	1476	Titanox A 168-LO	127
SOIL			
	113	Xylol	37,662
	131	Methyl Ethyl Ketone	452,411
	866	Experimental Wax Bld.	179
	886	Paraplex G-62	150
	937	Caster Oil	9
SYN			
	424	Hercolyn	10,634
	463	VYHH Resin	4,525
	900	Pent. A Sol IRS75xA	42,544
*	996	C-155	3,683,040
	1000	VC-111	43,920
*	1005	E-1068S-1	12,937
	1013	GB-6010 Resin	2,305,920

d.

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-HICKSVILLE PLANT
CALENDAR YEAR 1973

CODE #	MATERIAL DESCRIPTION
Chem 1	Vinyl Chloride
2	Trichlorethylene
5	Lauroyl Peroxide
7	Gelatin
8	Vinyl Acetate
25	Styrene
26	Butadiene
27	Potassium Persulfate
28	Dodecyl Mercaptan
29	Dresinate #208 70%
35	Dresinate #731 (70%)
37	Methocel 65 HG-50
39	Potassium Chloride
41	Divinyl Benzene
46	Dresinate #731 18% Sol
47	Dresinate #208 18% Sol
48	10% Emery 144 Sol.
154	Aqua Ammonia
159	Formaldehyde 40%
163	Oleic Acid
166	Potash Caustic Tech.
175	Triethanolamine
228	Tetra Ethanol Ammonia
233	2-Ethyl Hexanol **
1001	Toluene Sulphonic
1002	Perchlorethylene
1003	Phthalic Anhydride
1004	Iso-Octyl Alcohol
1008	Adipic Acid
1010	Butyl Alcohol
1014	Caprylic Acid
1015	Triethylene Glycol
1016	Dibutyl TinDi Laurate
1022	Iso-Decyl Alcohol ***
1023	Bisphenol "A"
1032	Fumaric Acid
1033	Maleic Anhydride
1035	Pelargonic Acid
1040	Neofat 18-59

HRC 001 1445

	1055	Tri Decyl Alcohol
	1056	1,3 Butylene Glycol
	1060	Ethylene Glycol
	1061	1,4 Butanediol
	1066	Glycerol
	1072	T-12
	1082	Bicarbonate of Soda
	1093	Methylene #2208
	1094	Methylene #2855
	1097	BC-100
	1102	Iso-Phthalic Acid
	1112	BC-200
	1117	Trimellitic Anhydride
	1118	Emery #144
	1124	Ethyl Acetate
	1125	Toluol
	1126	Propylene Glycol
	1127	Stannous Chloride
	1129	PM 3866 Glycol Blend
	1133	Symoron 512
	1144	Tetraisopronyl Titanate
	1145	Alfol-610 Alcohol
	1149	Di Methyl Formamide
	1152	Isopropanol
	1164	Di-Iso Butyl Carbinol
	1181	Topanol C A
	2042	1,6 Hexandediol
	2043	Iso Butyl Alcohol
	2044	Multrathane M
*	2046	S-101-55 Polyester
*	2047	S-102-160 "
*	2048	S-103-90 "
*	2049	S-105-120 "
*	2050	S-106-35 "
	2061	Neopentyl Glycol
	2062	Diethylene Glycol
	2065	Stabaxol I
*	2066	Polyester S-1019-75
	2073	Poly G 1020-P
	2074	Hylene W
	2083	Mondur TD 80
	2114	Tetra Hydro-Furan
*	2115	CO-77 Urethane Sol.
	2117	1,4 Cycchexanedimeth.
	2121	10% Formalaehyde
	2122	Poly G 630
	2125	Alfol #6
	2126	C-10-12 Alcohol
	2142	Cymel 301

HRC 001 1446

	286	Ø95 Casein
COLL		
	682	Gum Arabic
	701	Methocel 100 Cps.
	702	Acrysol G. S.
	709	Methocel-8000
RODE		
	611	Water Soluble Deod.
VULC		
	10	Neozone D
	20	French Proces Zinc O.
	55	Zenite Special
	56	AA-2246 Antioxident
	76	Tetrone A
	83	Aranate (Powder)
	85	2,5 Ditertiary Btuyl.
	88	Super Fine Flour Sul.
	89	Vandex
KEEP		
	755	Dowicide G.
PIG		
	578	Continex S R F
	598	Red-30
	696	Darco K B
	1493	Nuchar C N
	1476	Titanox A 168-LO
SOIL		
	113	Xylol
	131	Methyl Ethyl Ketone
	868	Experimental Wax Bld.
	886	Paraplex G-62
	929	E P O
	937	Caster Oil
SYN		
	424	Hercolyn D
	463	VYHH Resin
	900	Pentalyn A
*	1065	F-10898-1

HRC 001 1447

*	2159	S-502 Polyester
	2180	Thermolite T-9
	2183	TDI Stearate
*	2186	S-103-35 Polyester
	2192	C S Grade Talc
	2196	Chemetron Wax 100
	2198	Di Ethylamine
*	2200	S-1011-35 Polyester
*	2201	F-101-60 "
	2206	L-45 Silicone
	2208	1,6 Hexamethylene
	2209	Methyl Cellosolve
	2211	Myristyl Helene W
	2214	Carstan 8
	2215	Carstan 18
*	2218	Iso-Phorone Di-iso.
*	2226	S-105-40 Polyester
*	2227	S-1015-120-220 "
*	2231	20% M T S A
*	2242	S-105-75-150 Polyester
*	2243	S-1021-70-150 "
*	2244	S-1019-75-200 "
*	2247	S-101-55-150 "
*	2248	S-102-40-150 "
*	2250	S-102-70-180 "
	2257	N-Propanol
*	2275	S-105-40-57 Polyester
	2296	Chemetron Wax 100
	2298	Moca
	2299	30% AMP-MSA Cat.
*	2319	S-1022-20 Polyester
	2320	Isophone Diamine
*	2346	S-1019-25 Polyester
	2348	45% EAB 381.5 Lace.
*	2349	S-103-25 Polyester
MAIN	0	Water
	1	Revertex 73%
	2	60% Natural Latex
	20	Neoprene Latex
*	101	Type 2000-53 (A-74)
*	102	Type 1009 (A-77)
*	104	Type 2000 (A-79)
EX	372	Hy Flo Super Cel
DNB	254	Darvan #1
	256	Emulphor-on-870
	259	Nekal BA 75
	271	Acuarex MDL Paste

HRC 001 1448

(e.)

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-CHEMICAL BUSINESS AREA
CALENDAR YEAR 1974

CODE		MATERIAL DESCRIPTION
Chem	1	Vinyl Chloride
	2	Trichlorethylene
	5	Lauroyl Peroxide
	7	Gelatin
	8	Vinyl Acetate
	37	Methocel 65 HG-50
	175	Triethanolamine
	233	2-Ethyl Hexanol
	1001	Toluene Sulphonic Acid
	1002	Perchlorethylene
	1003	Phthalic Anhydride
	1004	Iso-Octyl Alcohol
	1005	Adipic Acid
	1015	Triethylene Glycol
	1015	Dibutyl Tin Di Laurate
	1022	Iso-Decyl Alcohol
	1023	Bisphenol "A"
	1033	Maleic Anhydride
	1035	Pelargonic Acid
	1035	Tri Decyl Alcohol
	1056	1,3 Butylene Glycol
	1060	Ethylene Glycol
	1061	1,4 Butanediol
	1036	Glycerol
	1082	Bicarbonate of Soda
	1093	Methylene #2208
	1094	Methylene #2209
	1097	BC-100
	1102	Iso-Phthalic Acid
	1117	Trimellitic Anhydride
	1118	Emery #144
	1125	Toluol
	1126	Propylene Glycol
	1127	Stannous Chloride
	1129	PM 3036 Glycol Blend
	1144	Tetraisopropyl Titanate
	1145	Alfol-610 Alcohol
	1149	Di Methyl Formamide
	1152	Isopropanol
	1164	Di-Iso Butyl Carbinol
	1181	Topanol C A

HRC 001 1449

2021		Hoechst Wax OP
2042		1,6 Hexandediol
2043		Iso Butyl Alcohol
2044		Multrathane M
2046	*	S-101-55 Polyester
2047	*	S-102-160 "
2048	*	S-103-90 "
2049	*	S-105-120 "
2050	*	S-106-35
2056		Altol 810
2061		Neopentyl Glycol
2062		Diethylene Glycol
2065		Stabaxol I
2073		Poly G 1020-P
2074		Hylene W
2083		Mondur TD 80
2114		Tetra Hydro-Furan
2117		1,4 Cycohexanedimethanol
2122		Poly G 630
2141		T-15
2142		Cymel 301
2159	*	S-502 Polyester
2180		Thermolite T-9
2185	*	R-109-300
2186	*	S-103-35 Polyester
2192		C S Grade Talc
2183		TDI Stearate
2196		Chemetron Wax 100
2198		Di Ethylamine
2200	*	S-1011-35 Polyester
2201	*	F-101-60
2205		L-45 Silicone
2208		1,6 Hexamethylene
2209		Methyl Cellosolve
2211		Myristyl Helene W
2214		Carstan 8
2218		Iso-Pherone Di-Iso.
2226	*	S-105-30 Polyester
2227	*	S-1015-120-220 Polyester
2242	*	S-105-75-150 Polyester
2243	*	S-1021-70-150
2244	*	S-1019-75-200 Polyester
2249	*	S-105-55-78
2250	*	S-102-70-180
2256		Cyclohexane Bis Methylamine
2257		N-Propanol
2273	*	S-1019-75-150
2275	*	S-105-40-57
2296	*	S-102-55-305
2299	*	30% AMP-MSA Cat.

	2319 *	S-1022-20 Polyester
	2320	Isophone Diamine
	2322 *	S-102-67-185
	2334 *	S-105-75
	2343	Irganox 1076
	2346 *	S-1019-75-35
	2348 *	45% EAB Sol.
	2349 *	S-103-25
	2350 *	S-1017-25
	2352 *	S-1023-40-105
	2359	Cymel 370
	2360 *	S-105-40-118
	2362 *	B-270-L Prepol
	2365	Dabco (Solid)
	2366	Silicone L-540
	2367 *	S-1011-55
	2378	Succinic Anhydride
	2382	Markure UL-6
	2391	Mondur E-320
	2393 *	S-1019-120-280
	2395 *	S-105-75-167
	2396	N-Methyl Ethanolamine
	2403	Isonate 125-M
	2404	Freon TF
	2405 *	CO B 3436 L H Prepol
	2415 *	Rucoflex BD-1
	2416 *	Rucoflex F-1201
MAIN	0	Water
EX	372	Celite (Hyflow Super-cel)
COLL	708	Ludox "AS"
PIG	695	Darco K B
	1403	Nuchar C N
	1576	Pigment A
SOIL	113	Xylol
	131	Methyl Ethyl Ketone
	886	Paraplex G-62
SYN	463	VYHH Resin

(f.)

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-CHEMICAL BUSINESS AREA
CALENDAR YEAR 1975

CODE		MATERIAL DESCRIPTION
Chem	1	Vinyl Chloride
	2	Trichlorethylene
	5	Lauroyl Peroxide
	7	Gelatin
	8	Vinyl Acetate
	37	Methocel F-50
	175	Triethanolamine
	233	2-Ethyl Hexanol
	1001	Toluene Sulphonic Acid
	1002	Perchlorethylene
	1003	Phthalic Anhydride
	1004	Iso-Octyl Alcohol
	1003	Adipic Acid
	1125	Propylene Glycol
	1016	Dibutyl Tin Di Laurate
	1022	Iso-Decyl Alcohol
	1023	Bisphenal A
	1033	Maleic Anhydride
	1055	Tri-Decyl Alcohol
	1056	1,3 Butylene Glycol
	1060	Ethylene Glycol
	1061	1,4 Butanediol
	1066	Glycerol
	1082	Bicarbonate of Soda
	1097	RC-100
	1102	Iso-Phthalic Acid
	1117	Trimellitic Anhydride
	1124	Ethyl Acetate
	1125	Toluol
	1127	Stannous Chloride
	1129	PM 3866 Glycol Blend
	1144	Tetra Isopropyl Titanate
	1145	Alfol #610
	1149	Di Methyl Formamide
	1152	Isopropanol
	1164	Di-Iso Butyl Carbinal
	1181	Tonanol CA
	2021	Hoechst Wax OP
	2042	1,6 Hexandediol
	2043	Iso Butyl Alcohol

wt

HRC 001 1452

2044		Multrathane M	
2046	*	S-101-55 Polyester	
2047	*	S-102-160	"
2048	*	S-103-90	"
2049	*	S-105-120	"
2050	*	S-106-35	"
2056		Alfol 610	
2061		Neopentyl Glycol	
2062		Diethylene Glycol	
2065		Stabaxol I	
2074		Hylene W	
2083		Mondur TD 80	
2114		Tetra Hydro-Furan	
2117		1,4 Cycohexanedimethanol	
2122		Poly G-630	
2142		Cymel 301	
2185	*	R-109-300	
2363	*	F-102-50 Polyester	
2196		Chemetron Wax 100	
2198		Di Ethylamine	
2200	*	S-1011-35 Polyester	
2206		L-45 Silicone	
2208	·	1,6 Hexamethylene	
2209		Methyl Cellosolve	
2211		Myrstyl Helene W	
2214		Carstan 8	
2216		Iso-Phorone Di-Isocyante	
2226	*	S-105-40 Polyester	
2227	*	S-1015-120-220 Polyester	
2242	*	S-105-75-150 Polyester	
2243	*	S-1021-70-150	"
2248	*	S-102-40-150 (305-183)	
2250	*	S-102-70-180 Polyester	
2257		N-Propanol	
2273	*	S-1019-75-150 Polyester	
2296	*	S-102-55-305	"
2299	*	30% AMP-MSA Cat.	
2300		EAB-381-5	
2320		Isophone Diamine	
2322	*	S-102-87-185 Polyester	
2330		EC 2690 Methane Sul. Acid	
2331		AMP (Romilar)	
2332		Di Bromo Butenediol	
2334	*	S-105-75 Polyester	
2343		Irganox 1076	
2346	*	S-1019-25-35 Polyester	
2348	*	45% EAB Sol.	
2352	*	S-1023-40-106 Polyester	
2359		Cymel 370	
2360	*	S-105-40-118 Polyester	

	2368	*	S-1019-120 Polyester
	2374		Acryloid AT-56
	2375		Raybo 3
	2393	*	S-1019-120-280 Polyester
	2395	*	S-105-75-167 "
	2417	*	S-1022-35 "
	2418		Sodium Benzoate
	2437	*	S-1019-100 Polyester
	2438		Silicone PFA-1200
	2159	*	F-109-60 Polyester
EX	372		Celite (Hyflow Super-cel)
COLL	708		Ludox "AS"
PIG	1577		Polycarbon C
	1589		Nuchar C-115 N
	1590		Norit SG Extra
SOIL	113		Xylol
	124		Acetone
	131		Methyl Ethyl Ketone
	886		Paraplex G-62
SYN	463		VYHH Resin

	2458	Irganox #1035
	2460	Ionol
	2462 *	F-1403 Polyester
	2467 *	F-1016
	2468 *	S-1025-115 Polyester
	2466	Stannous Oxalate
	2470	Degussa OK 412
	2472	K-3930-L Pronol
	2473	Tween 20
	2474	Tritonx 405
	2475	Emulsifier Solution
	2476	Sodium Hyroxide
	2477	Acrysol ASE-75
	2478	14% H M D A
	2479	Thickener Solution
	2481	20% Sodium Hydroxide
	2482 *	S-1019-55 Polyester
EX	372	Celite (Hyflow Super-cel)
PIG	1577	Polycarbon C
	1593	Nuchar C-EE-N
	1594	Activated Carbon C
SOIL	113	Xylol
	131	Methyl Ethyl Ketone
	886	Paraplex G-62
SYN	463	VYHH Resin
MAIN	0	Water

HRC 001 1455

(5.)

RAW MATERIAL REQUIREMENT
HOOKER CHEMICAL/RUCO DIVISION-CHEMICAL BUSINESS AREA
CALENDAR YEAR 1976

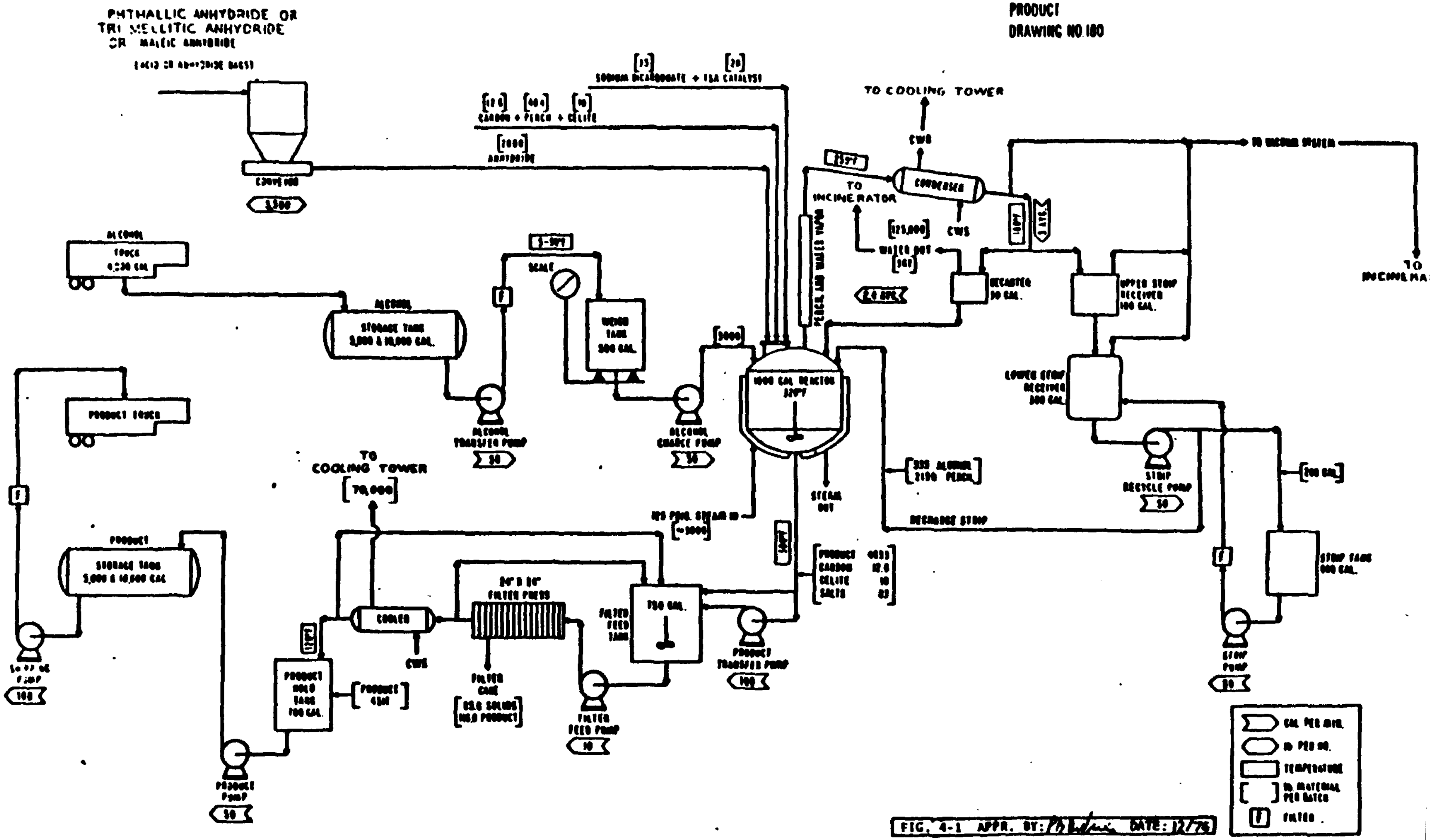
CODE	MATERIAL DESCRIPTION
Chem 233	2-Ethyl Hexanol
1001	Toluene Sulphonic Acid
1002	Perchlorethylene
1003	Phthalic Anhydride
1004	Iso-Octyl Alcohol
1008	AdipicAcid
1014	Caprylic Acid
1015	Triethylene Glycol
1016	Dibutyl Tin Di Laurate
1022	Iso-Decyl Alcohol
1023	Bisphenol A
1033	Maleic Anhydride
1035	Emtac #1202
1055	Tri-Decyl Alcohol
1056	1,3 Butylene Glycol
1060	Ethylene Glycol
1061	1,4 Butanediol
1066	Glycerol
1082	Bicarbonate of Soda
1094	Methylene 2209
1097	BC-100
1102	Iso-Phthalic Acid
1117	Trimellitic Anhydride
1124	Ethyl Acetate
1125	Toluol
1126	Propylene Glycol
1127	Stannous Chloride
1129	Glycol Blend Pm 3866
1144	Tetra Isopropyl Titanate
1145	Alfol #610
1149	Di Methyl Formamide
1152	Isopropanol
2042	1,6 Hexandediol
2043	Iso Butyl Alcohol
2044	Multrathane M
2046 *	S-101-55 Polyester
2047 *	S-102-160 Polyester
2049 *	S-105-120
2021	Hoechst Wax

HRC 001 1456

2050	*	S-106-35
2061		Neopentyl Glycol
2062		Diethylene Glycol
2065		Stabaxol I
2073		Poly G-1020 P
2074		Hylene W
2080		Di-Propylene Glycol
2083		Mondur TD 80
2114		Tetra Hydro-Furan
2117		1,4 Cycohexanedimethanol
2122		Poly G-630
2128		1,1,1 Trichlorethane
2142		Cymel 301
2159	*	F-109-60 Polyester
2195		Chemetron Wax 100
2198		Di Ethylamine
2206		L-45 Silicone
2208		1,6 Hexamethylene
2209		Methyl Cellosolve
2211		Myrstyl Helene W
2214		Carstan 8
2218		Iso-Phorone Di-Isocyante
2226	*	S-105-40 Polyester
2227	*	S-1015-120-220 Polyester
2242	*	S-105-75-150 Polyester
2243	*	S-1021-70-150 Polyester
2250	*	S-132-70-180 Polyester
2257		N-Propanol
2276	*	S-1015-80 Polyester
2281	*	S-1021-75 Polyester
2296	*	S-102-55-305
2299	*	30% AMP-MSA Cat.
2320		Isophone Diamine
2322	*	S-102-87-185 Polyester
2330		EC 2690 Methane Sul. Acid
2331		AMP (Regular)
2334	*	S-105-75 Polyester
2343		Irganox 1076
2349	*	S-103-25 Polyester
2359		Cymel 370
2360	*	S-105-40-118 Polyester
2367	*	S-S-1011-55 Polyester
2393	*	S-1019-120-280
2395	*	S-105-75-167 Polyester
2417	*	S-1022-35 Polyester
2431	*	S-102-55 Polyester
2445	*	S-102-110 Polyester
2450		CAB 381-2
2456		Polymeg #1000
2457		Tinuvin #328

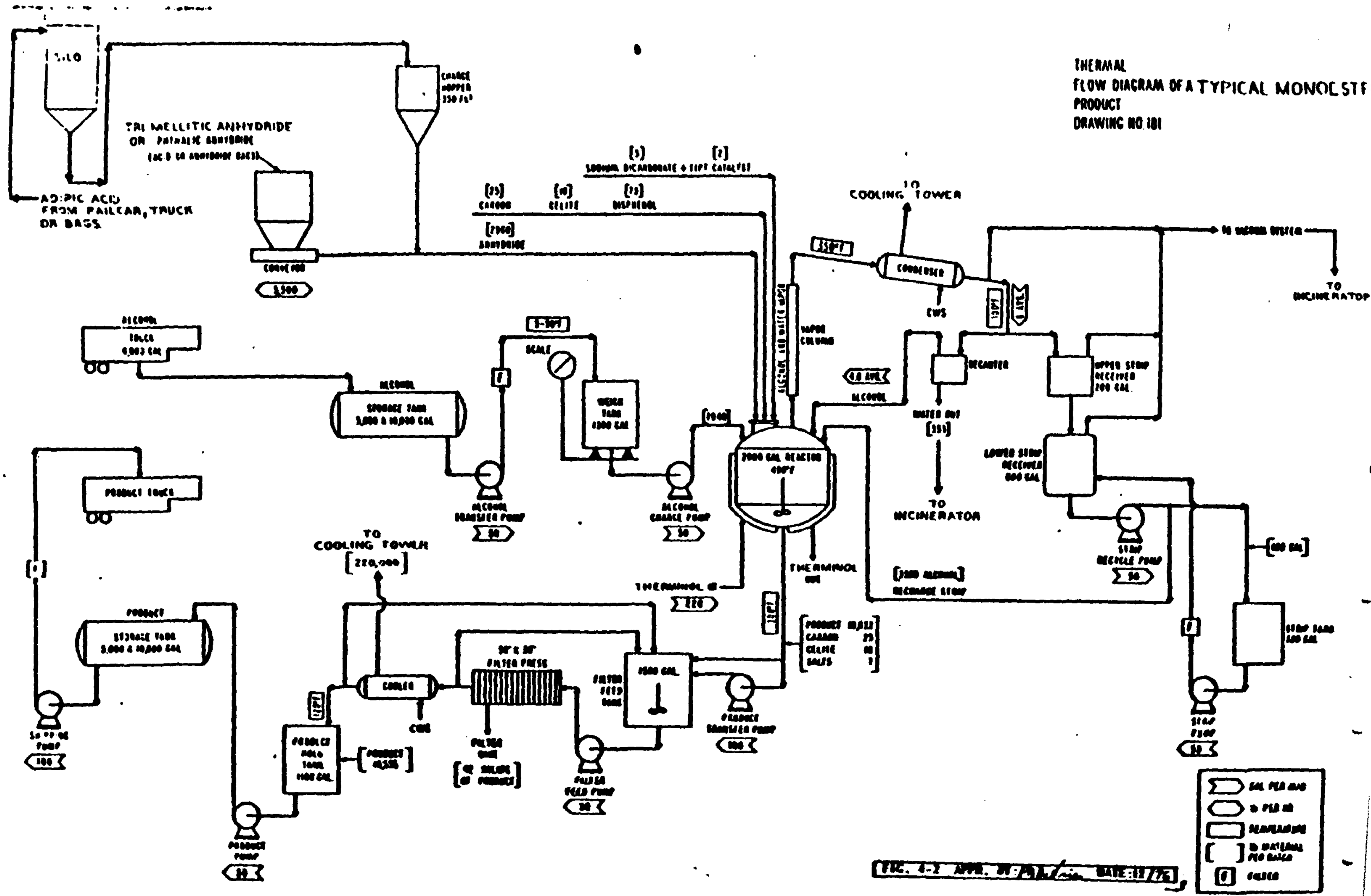
HRC 001 1457

CATALYTIC
FLOW DIAGRAM OF A TYPICAL MONOESTER I
PRODUCT
DRAWING NO.180



OPERATIONAL MODE - BATCH

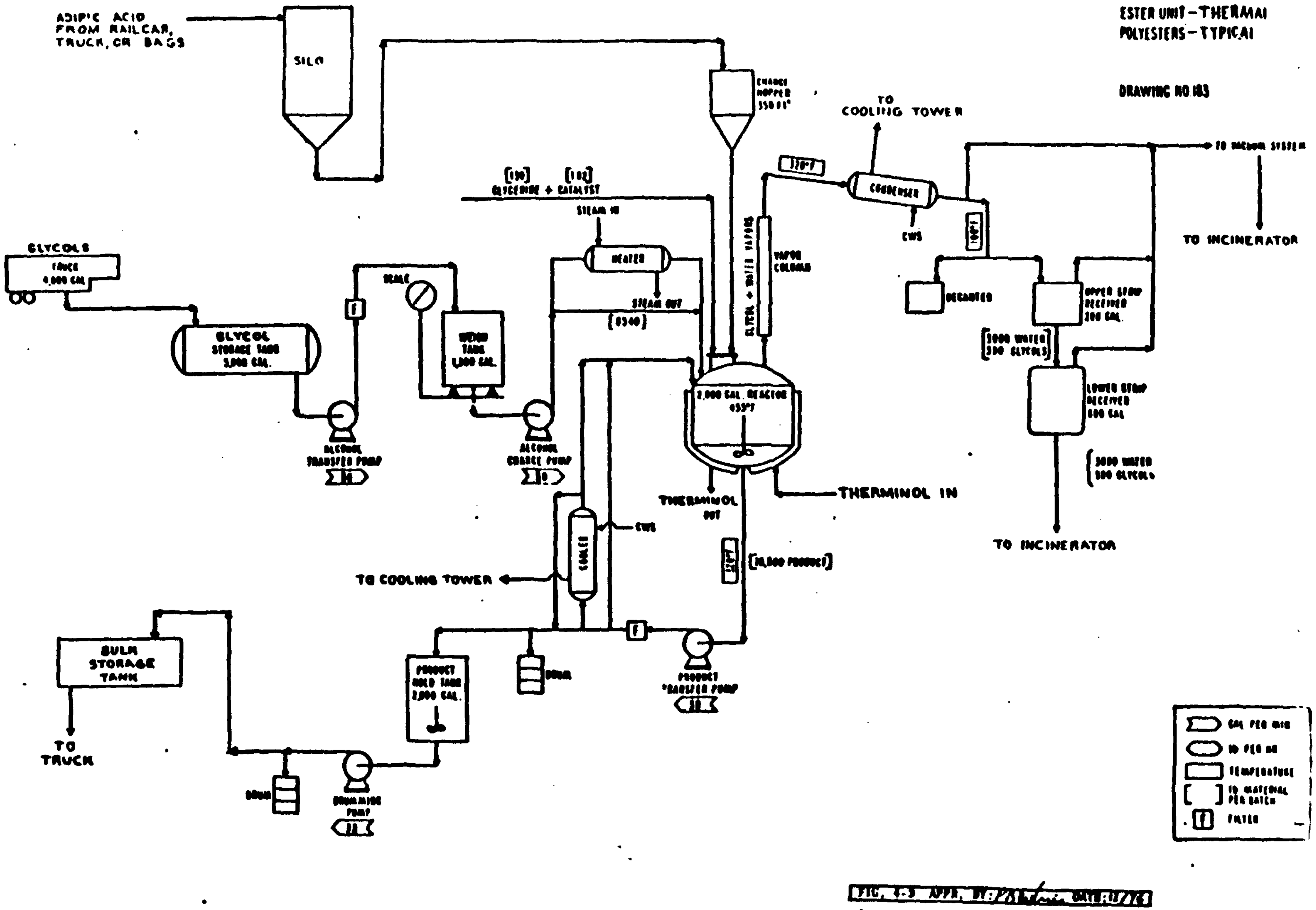
AVE. CYCLE TIME - 12 HOURS



OPERATIONAL MODE - BATCH

AVE. CYCLE TIME - 12 HOURS

HRC 001 1460



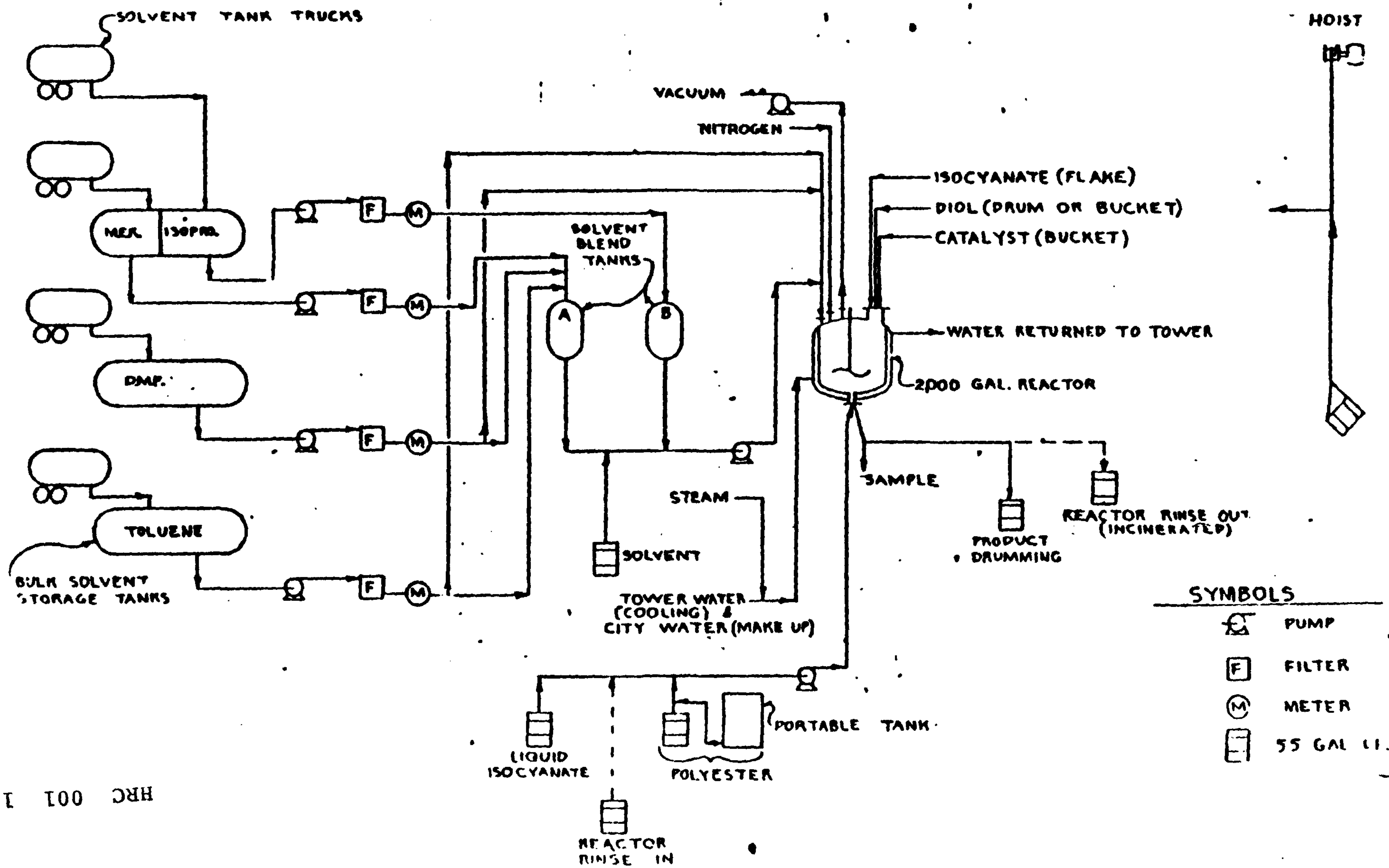
OPERATIONAL MODE - BATCH

AVE. CYCLE TIME - 19 HOURS

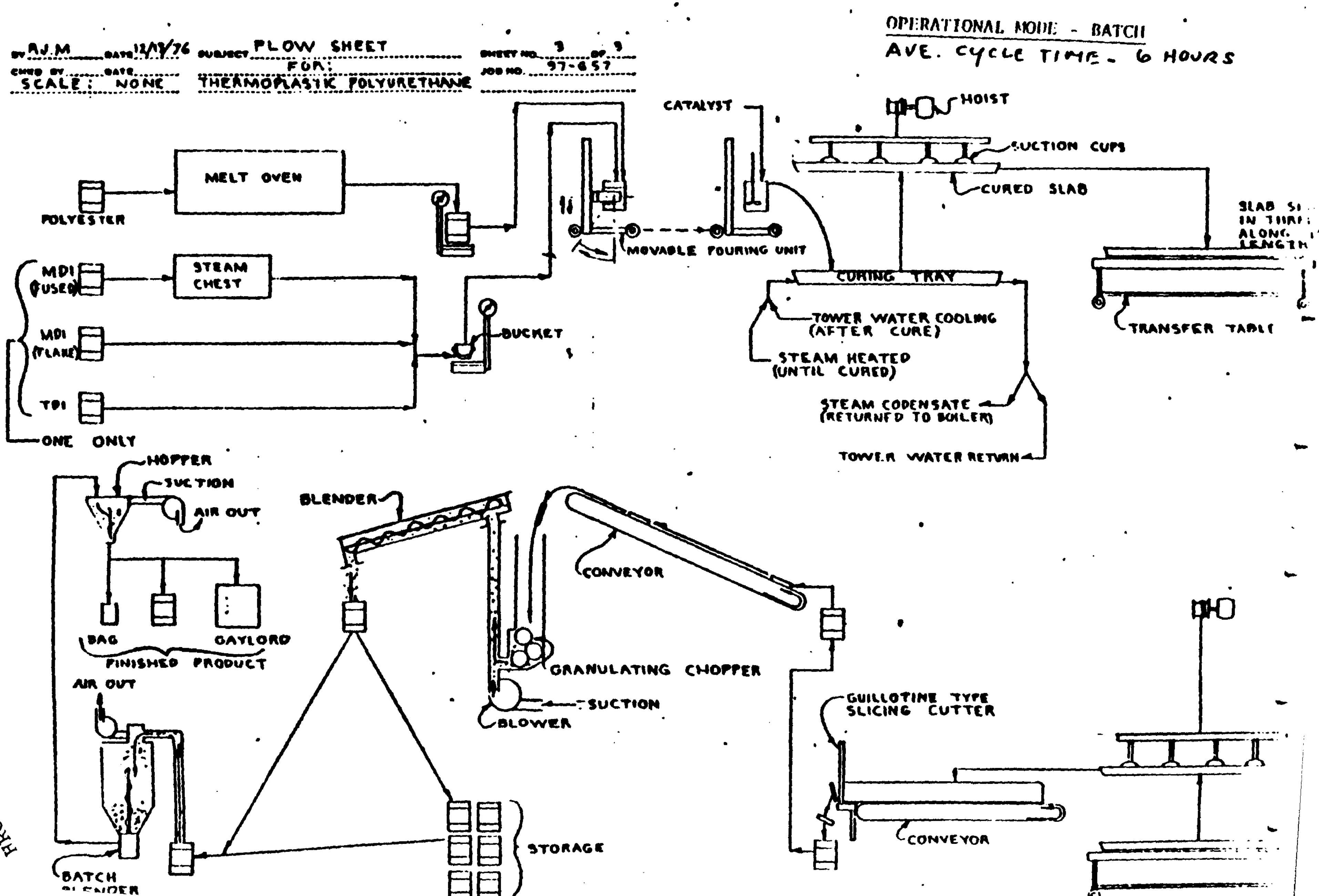
HRC 001 1461

BY RJM DATE 11/18/76 SUBJECT FLOW SHEETS FOR: POLYURETHANE SHEET NO. 1 OF 3
CHKD. BY ___ DATE ___ JOB NO. 27-657
SCALE: NONE

OPERATIONAL MODE - BATCH
AVE. CYCLE TIME - 12 HOURS



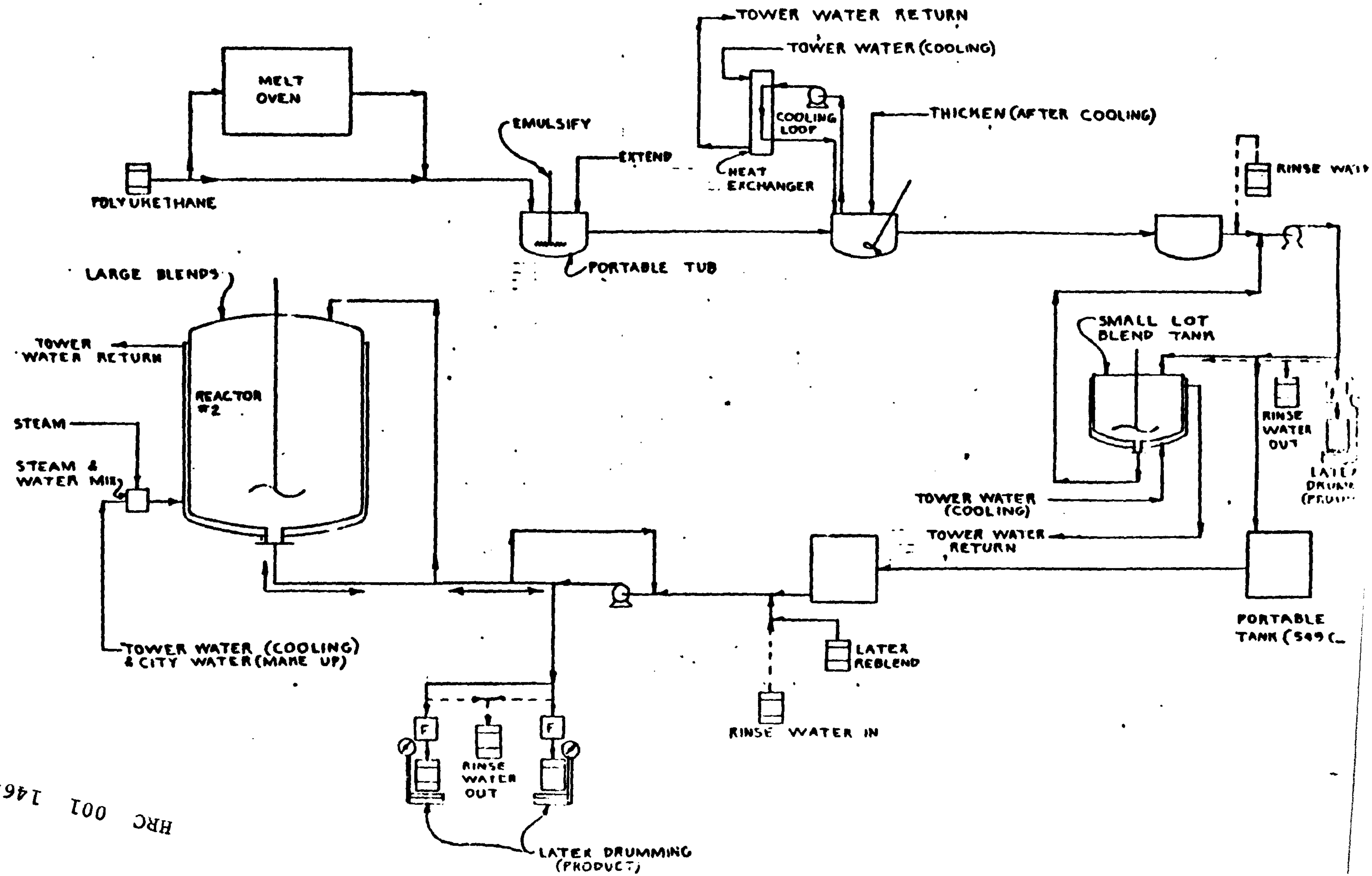
HRC 001 1462


BY A.J.M.
DATE 12/17/76
SUBJECT FLOW SHEET
FOR:
THERMOPLASTIC POLYURETHANE
SHEET NO. 3 OF 9
JOB NO. 97-657
SCALE: NONE
OPERATIONAL MODE - BATCH
AVE. CYCLE TIME - 6 HOURS
MELT OVEN
POLYESTER
MDI (FUSED)
STEAM CHEST
MDI (FLAKE)
TDI
ONE ONLY
BUCKET
CATALYST
MOVABLE POURING UNIT
HOIST
SUCTION CUPS
CURED SLAB
CURING TRAY
TOWER WATER COOLING (AFTER CURE)
STEAM HEATED (UNTIL CURED)
STEAM CODENSATE (RETURNED TO BOILER)
TOWER WATER RETURN
TRANSFER TABLE
HOPPER
SUCTION
AIR OUT
BLENDER
CONVEYOR
BAG
GAYLORD
FINISHED PRODUCT
GRANULATING CHOPPER
SUCTION
BLOWER
AIR OUT
GUILLOTINE TYPE SLICING CUTTER
CONVEYOR
STORAGE
BATCH BLENDER

BY R.J.M. DATE 12/13/76 SUBJECT FLOW SHEET FOR : LATEX SHEET NO. 2 OF 3
CHKD BY ____ DATE ____ JOB NO. 97-657
SCALE : NONE

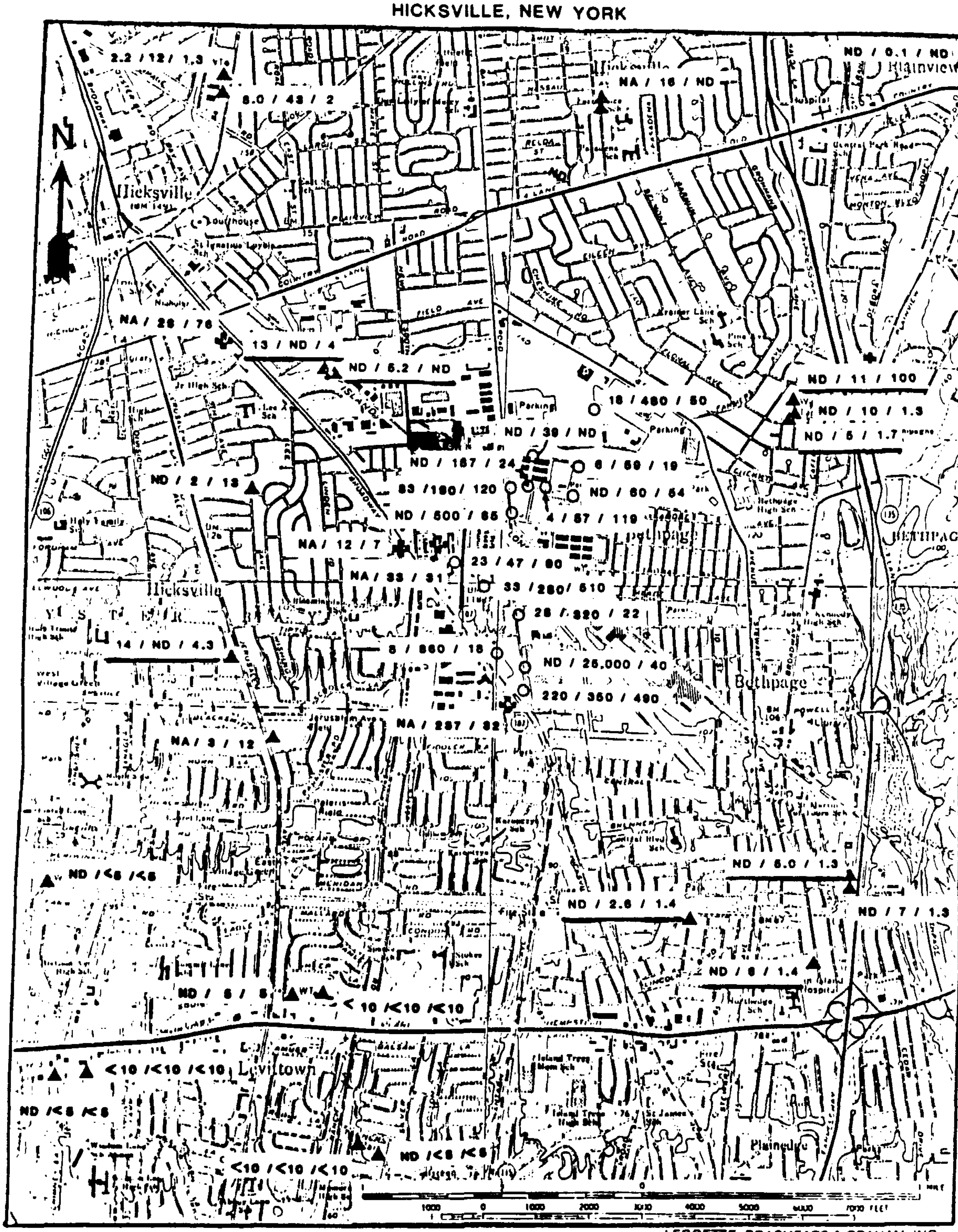
OPERATIONAL MODE - BATCH

AVE. CYCLE TIME - 10 HOURS



WHITEMAN, OSTERMAN & HANNA

HICKSVILLE, NEW YORK



LEGGETTE, BRASHEARS & GRAHAM, INC.

MAXIMUM CONCENTRATIONS OF 1,2 DICHLOROETHYLENE, 1,1,2 TRICHLOROETHYLENE, AND TETRACHLOROETHYLENE (ug/l)

FOR THE PERIOD NOVEMBER 1975 TO AUGUST 1983

- UNDERLINED VALUES WERE FROM SAMPLES TAKEN ON 12/20/76, ANALYZED BY ERCO. THESE WELLS HAVE NOT EXHIBITED ANY CHLOROETHYLENES SINCE THAT TIME.

- WELLS WITHOUT VALUES HAVE NEVER EXHIBITED CHLOROETHYLENES.

- NA - NOT ANALYZED
- ND - NOT DETECTED.

▲ PUBLIC SUPPLY WELL

—O— INDUSTRIAL SUPPLY WELLS

✚ NCDPW OBSERVATION WELL

HRC 001 1466

WHITEMAN, OSTERMAN & HANNA

HICKSVILLE, NEW YORK

LEGGETTE, BRASHEARS & GRAHAM, INC.

OCCURRENCE OF VINYL CHLORIDE IN INDUSTRIAL SUPPLY WELLS

FOR THE PERIOD NOVEMBER 1975 TO APRIL 1977

MAXIMUM/MINIMUM (ug/l)

HRC 001 1468

5-15-5 (10/79)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
ALBANY, NEW YORK 12233

INDUSTRIAL CHEMICAL SURVEY

PART I.

Please refer to attached table I

PLEASE COMPLETE AND RETURN TO THE ABOVE ADDRESS, ATTENTION: INDUSTRIAL CHEMICAL SURVEY.

COMPANY NAME	SIC CODE (If known)	OFFICE USE ONLY
GRUMMAN AEROSPACE CORPORATION	3721	

COMPANY MAILING ADDRESS	CITY	STATE	ZIP CODE
MAIL STOP: B08/30	BETHPAGE	NEW YORK	11714

PLANT NAME (If different)	CONTACT NAME	TELEPHONE
—	JOHN OHLMANN	Area (516) 575-2385

PLANT ADDRESS (If different)	CITY	STATE	ZIP CODE
Street —	—	—	—

PRINCIPAL BUSINESS OF PLANT
AIRCRAFT

NOTE: (If parent company, give name and addresses of all divisions, subsidiaries, etc. located in New York State. A separate questionnaire is to be completed and submitted for each.)

NOT APPLICABLE

PART II
Discharge Information

WATER

1. Does your plant discharge liquid wastes to a municipally owned sanitary sewer system? ☒ Yes ☐ No
   Name of System NASSAU COUNTY SANITARY SEWER
2. Is your facility permitted to discharge liquid wastes under a State (SPDES) or Federal (NPDES) permit? Permit Number 0 0 9 6 7 9 2 ☒ Yes ☐ No
3. Do you discharge liquid wastes in any other manner? ☐ Yes ☒ No
   Explain

If any of the above are "Yes":
- a. Do you discharge process or chemical wastes – (i.e. water used in manufacturing including direct contact cooling water and scrubber water)? ☒ Yes ☐ No
- b. Do you discharge non-contact cooling water? ☒ Yes ☐ No
- c. Do you discharge collected storm drainage only? ☐ Yes ☒ No
- d. Do you discharge sanitary wastes only? ☐ Yes ☒ No

AIR

1. Does your facility have sources of possible emissions to the atmosphere? ☒ Yes ☐ No
2. Enter Location and Facility Code as shown on your Air Pollution Control Application for Permits and Certification (If applicable) 2 8 2 4 0 0 1 1 6 0

SOLID & CONCENTRATED LIQUID WASTES

1. List Name and Address of Firm (Including yourself) removing wastes other than office and cafeteria refuse.

Name			
MODERN TRANSPORTATION, INC.			
Address 75 JACOBUS AVE.	City S. KEARNY	State N.J.	Zip Code 07032
Name SHERIDAN INDUSTRIAL OIL CORP.			
Address 114 PECONIC AVE.	City MEDFORD	State N.Y.	Zip Code 11763

(SEE ATTACHMENT "A" FOR ADDITIONAL NAMES)

2. List Location(s) of Landfill(s) owned and used by your facility.

		Active	Inactive
1	NONE	☐	☐
2		☐	☐

PESTICIDES

1. Does this facility:
   - Manufacture Pesticides or Pesticide Product Ingredients? ☐ Yes ☒ No
   - Produce Pesticides or Pesticide Product Ingredients? ☐ Yes ☒ No
   - Formulate Pesticides? ☐ Yes ☒ No
   - Repackage Pesticides? ☐ Yes ☒ No
2. EPA Establishment Number ☐☐☐☐☐☐ – ☐☐ – ☐☐☐

HRC 001 1470

PART III

SUBSTANCES OF CONCERN
(Refer to attached TABLE I)

Complete all information for those substances your facility has used, produced, stored, distributed or otherwise disposed of since January 1, 1971. Do not include chemicals used only in analytical laboratory work. Enter the name and code from Table I. If facility uses a substance in any of the Classes A – F which is not specified in the list, enter it as code class plus 99, e.g. B99 with name, usage, etc.

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	GAL. (✓)	LB. (✓)	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.)
CLASS A- HALOGENATED HYDROCARBONS						
METHYLENE CHLORIDE	A02	41,596			X	SOLVENT
FREONS	A05	127,913			X	REFRIGERANT & SOLVENT
TRICHLOROETHYLENE	A12	1,377,457			X	DEGREASING SOLVENT
TETRACHLOROETHYLENE	A13	281,288			X	SOLVENT
CHLORINATED PROPANE	A14	37			X	
					X	
PCB'S	A21	54,220	42,807		X	TRANSFORMER FLUID
ETHYLENE DICHLORIDE	A99	185				
CLASS B- HALOGENATED ORGANICS						
CHLOROARYL ETHERS	B10	126			X	
FC-77 (FLUORINERT LIQUID) &						
DOW CORNING #340 LIQUID	B99	24,918			X	COOLANT
CLASS C- PESTICIDES						
MALATHION	C07	45		X		PESTICIDE
KELTHANE	C12	45		X		PESTICIDE
CARBARYL	C15	45		X		PESTICIDE
BETASAN 4E	C99	4		X		PESTICIDE
DURSBAN 2EC	C99	20		X		PESTICIDE
PROMETON	C99	605		X		PESTICIDE
DYRENE	C99	25		X		PESTICIDE
CYGON	C99	3		X		PESTICIDE
DICAMBA, MCPP, 2, 4-D	C99	330		X		PESTICIDE
SEE ATTACHMENT "B" FOR ADDITIONAL "SUBSTANCES OF CONCERN")						

HRC 001 1471

you use chemicals of unknown composition, list trade name or other identification, name of supplier and complete information.

NAME OF SUBSTANCE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	GAL. (✓)	LB. (✓)	SUPPLIER	PURPOSE OF USE (State whether produced, reacted, blended, packaged, distributed, no longer used, etc.)

I hereby affirm under penalty of perjury that information provided on this form is true to the best of my knowledge and belief. False statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

SIGNATURE (Owner, Partner, or Officer): Robert J Myers | DATE: 8 June 1981

NAME (Printed or Typed): ROBERT J. MYERS | TITLE: VICE PRESIDENT, ADMINISTRATION & RESOURCES

SOLID & CONCENTRATED LIQUID WASTES

1. (continued)

CHEMICAL POLLUTION CONTROL, INC.
FOURTH AVENUE
BAYSHORE, N. Y. 11706

TRANSFORMER SERVICES, INC.
P. O. BOX 1077
CONCORD, NEW HAMPSHIRE 03307

RGM LIQUID WASTE REMOVAL CO.
972 NICOLLS ROAD
DEER PARK, N. Y. 11729

PART III - SUBSTANCES OF CONCERN (continued)

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(X) GAL.	(X) LB.	PURPOSE OF USE
CLASS D - AROMATIC HYDROCARBONS						
BENZENE	D01	5.4			X	
TOLUENE	D02	131,087			X	SOLVENT
XYLENE	D03	18,710			X	SOLVENT
STYRENE	D07	2,275			X	PLASTIC CONSTITUEN
FLUORANTHENE	D09	149			X	ACCELLERATOR FOR SEALANT
CLASS E - TARS						
NONE						
CLASS F - SUBSTITUTED AROMATICS						
PHENOL, CRESOL, XYLENOL	F01	5,941			X	PAINT STRIPPING
HYDROQUINONE	F02	276			X	PHOTO DEVELOPING
NITROTOLUENE	F05	337			X	ADHESIVE COMPONENT
TOLUENE DIISOCYANATE	F10	97			X	PLASTIC
PHTHALIC & MALEIC ANHYDRIDE	F14	2,275			X	PLASTICS
DYES & ORGANIC PIGMENTS	F24	10,856			X	PLASTICS
CLASS G - MISCELLANEOUS						
ASBESTOS	G01	469			X	CONSTITUANT
ISOPHORONE	G04	9			X	IN SEALANTS
EPOXY CATALYST & RESINS	G10	50,164			X	& ADHESIVES
CLASS M - METALS						
ANTIMONY	M01	3.6			X	
LEAD	M07	1,713			X	DYE MAKING
ZINC	M13	83			X	
CHROMIUM	M05	2,143			X	METAL FINISHING
SILVER	M11	260			X	PHOTOGRAPHIC USE
ALUMINUM	M99	2,500,000 (APPROX.)			X	AIRCRAFT
TITANIUM	M99	514,000 (APPROX.)			X	PRODUCTION
STEEL	M99	3,000 (APPROX.)			X	

PART III - SUBSTANCES OF CONCERN (continued)

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(X) GAL. LB.	PURPOSE OF USE

WATER TREATMENT CHEMICALS:

BOILER WATER TREATMENT CHEMICALS

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(X) GAL. LB.	PURPOSE OF USE
SODIUM HEXAMETAPHOSPHATE		248		X	WATER TREATMENT
SODIUM SULFITE		225		X	WATER TREATMENT
SODIUM HYDROXIDE		475		X	WATER TREATMENT
FILMING AMINE CONDENSATE LINE CORROSION INHIBITOR (960 LBS. X 14% = 134.4 LBS. OCTADECYLAMINE)		960		X	STEAM CONDENSATE TREATMENT

COOLING TOWER WATER TREATMENT CHEMICALS:

ALL PRODUCTS OF THE DEARBORN CHEMICAL CO.

NAME OF SUBSTANCE	CODE	AVERAGE ANNUAL USAGE	AMOUNT NOW ON HAND	(X) GAL. LB.	PURPOSE OF USE
DEARBORN 900		8,900		X	WATER TREATMENT
DEARBORN 874		272		X	WATER TREATMENT
DEARBORN 717		1,285		X	WATER TREATMENT
DEARBORN 706		443		X	WATER TREATMENT

DEARBORN HAS GIVEN US THE FOLLOWING COMPOSITIONS ON A "CONFIDENTIAL BASIS"

DEARBORN 900	-	POTASSIUM HYDROXIDE	-	12%
DEARBORN 874	-	POTASSIUM HYDROXIDE	-	5%
	-	FORMALDEHYDE	-	0.1%
DEARBORN 706	-	ALKYL TRIMETHYLENE DIAMINE	-	15%
DEARBORN 717	-	QUARTERNARY AMIME	-	12.5%
	-	BIS (TRI-N-BUTYLTIN) OXIDE	-	2.25%

A more complete analysis could be obtained from:

Dearborn Chemical
Chemed Division
300 Genesee Street
Lake Zurick, Illinois 60047

HRC 001 1474

hooker RUCO DIVISION

NEW SOUTH ROAD, HICKSVILLE, NEW YORK 11802
PHONE (516) 931-8100 TWX 510 221-1871

May 6, 1975

Mr. John F. Welsch
Supervisor of Industrial Waste
Bureau of Water Pollution Control
Nassau County Department of Health
240 Old Country Road
Mineola, N.Y. 11501

Dear John:

Attached are 3 (three) completed copies of the new application form "D" for SPDES permit.

Please refer to our correspondence of April 22, 1975 on the old SPDES form. Outfall numbers 001 and 002 no longer exist. (Hence 003-005 are renumbered 001-003). In the interum the decision was made to close this plant for PVC production. There are no plans to produce another product instead. However, if in the future and alternative product with a water discharge is made we will contact your office.

We feel the Hicksville Site is now in compliance with the water discharge regulations. Per our discussion today (May 6, 1975) discharges 001 to 003 do not require additional treatment. The incinerator for the esterification discharge has been running for several weeks, but with some problems. We expect them to be solved with-in 2 - 4 weeks and this discharge eliminated.

If you have any questions please do not hesitate to call.

Very truly yours,

Malcolm K Brown

Malcolm K. Brown
Professional Engineer

ENGR:1805-5:MKB:rb

HRC 001 1475

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

PLICATION FORM "D" FOR A STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) PERMIT
(Becomes A SPDES Permit When Signed By Permit Issuing Official)

ON TYPE ☐ Renewal | IF RENEWAL, GIVE PREVIOUS NO. NY-

NAME (Corporate, Partnership or Individual): ook r Chemical Corp./Ruco Division

ER'S MAILING ADDRESS (State, City, State, Zip Code): ew South Road, Hicksville, New York 11802

ALL CORRESPONDENCE TO: (Name, Title and Address): alcolm Brown | TELEPHONE NO. (Include Area Code): 516 931-8100

ILITY NAME: ooker Chemical Corp./Ruco Division | FACILITY LOCATION (Street or Road): New South Road | CITY, TOWN OR VILLAGE: Hicksville

NTY: assau | GIVE EXPLICIT DIRECTIONS TO LOCATION, IF NECESSARY:

URE OF BUSINESS OR TYPE OF FACILITY: anufacturing | POPULATION SERVED (See Instructions): -

QUENCY OF DISCHARGE
ll Year? ☒ Yes ☐ No If "No", Specify No. of Months ____ | All Week? ☒ Yes ☐ No If "No", Specify No. of Days ____

S YOUR DISCHARGE CONTAIN OR IS IT POSSIBLE FOR YOUR DISCHARGE TO CONTAIN ONE OR MORE OF THE FOLLOWING SUBSTANCES ADDED AS A RESULT OF R OPERATIONS, ACTIVITIES OR PROCESSES?
lease Check: ☐ Aluminum ☐ Ammonia ☐ Beryllium ☐ Cadmium ☐ Chlorine ☐ Chromium ☐ Copper ☐ Cyanide
☐ Grease ☐ Lead ☐ Mercury ☐ Nickel ☐ Oil ☐ Phenols ☐ Selenium ☐ Zinc ☒ None of These

CHARGE DATA (Use additional forms, if necessary) (See Instructions)

FALL NO.	Status	TYPE OF WASTE	TYPE OF TREATMENT	DESIGN FLOW
001	☐ Proposed ☒ Existing ☐ Replacement ☐ Expansion	direct contact condenser water	none	10,000 Gal/Day

FACE DISCHARGE	If "Yes", Name of Receiving Waters	Classification	Waters Index No.	
☐ Yes ☒ No				

SURFACE DISCHARGE	If "Yes", Name of nearest Surface Water	Distance	SOIL TYPE	Depth to Water Table
☒ Yes ☐ No	S. Oyster Bay	5 miles Ft.	sandy	60 ft.

TFALL NO.	Status	TYPE OF WASTE	TYPE OF TREATMENT	DESIGN FLOW
002	☐ Proposed ☒ Existing ☐ Replacement ☐ Expansion	Boiler/cooling water	none	15,000 Gal/Day

RFACE DISCHARGE	If "Yes", Name of Receiving Waters	Classification	Waters Index No.	
☐ Yes ☒ No				

BSURFACE DISCHARGE	If "Yes", Name of nearest Surface Water	Distance	SOIL TYPE	Depth to Water Table
☒ Yes ☐ No	S. Oyster Bay	5 miles Ft.	sandy	60 ft.

TFALL NO.	Status	TYPE OF WASTE	TYPE OF TREATMENT	DESIGN FLOW
003	☐ Proposed ☒ Existing ☐ Replacement ☐ Expansion	sanitary	septic tank	4,000 Gal/Day

RFACE DISCHARGE	If "Yes", Name of Receiving Waters	Classification	Waters Index No.	
☐ Yes ☒ No		Ft.		

BSURFACE DISCHARGE	If "Yes", Name of nearest Surface Water	Distance	SOIL TYPE	Depth to Water Table
☒ Yes ☐ No	S. Oyster Bay	5 miles Ft.	sandy	60 ft.

I hereby affirm under penalty of perjury that information provided on this form and any attached supplemental forms is true to the best of my knowledge and belief. alse statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

PPLICANT'S SIGNATURE (See Instructions)	Date	Printed Name	Title
Bradley Harrison	5/8/75	J. Bradley Harrison	Works Manager

HRC 001 1476

PERMIT VALIDATION SECTION
(Department of Environmental Conservation Use Only)

This SPDES permit is issued in compliance with Title 8 of Article 17 of the Environmental Conservation Law of New York State and in compliance with the provisions of the Federal Water Pollution Control Act, as amended by the Federal Water Pollution Control Act Amendments of 1972, P.L. 92-500, October 18, 1972 (33 U.S.C. §1251 et. seq.) (hereinafter referred to as "the Act"), and subject to the attached conditions.

APPLICATION NO. NY-

EFFECTIVE DATE | EXPIRATION DATE

ATTACHMENTS:

Signature of Permit Issuing Official ____ Date ____

CARD 1	Type Est. 66	Type Own 68	SIC Code 70	# Out Falls 74	Dis Class 76	CARD 3	Region 71	County 72	Major Basin 74	Sub Basin 76	Compact Area 78	CARD 6	Latitude 53 58	Longitude 59 64	CARD 7	Lim 57

75-1 (3/7-

MEMORANDUM

NASSAU COUNTY DEPARTMENT OF HEALTH

240 Old Country Road - Mineola, New York 11501

To : S.O. Smith Date: July 29, 1977

From : J. P. Hurley

Subject : Hooker Chemical

In response to your memo of July 15, 1977 regarding information requested by Mr. Murray Schiffman on Hooker Chemical Corp., I submit the following:

Hooker Chemical ceased their operation with vinyl chloride in April 1975. At that time they converted their industrial wastewater discharge to an incineration process whereby 4000 gpd of wastewater were incinerated. At the present time, their groundwater discharge includes sanitary waste (4000 gpd), cooling tower blowdown (10,000 gpd) and boiler blowdown (10,000 gpd). Receipt of the SPDES permit application for these three discharges is pending. Prior to 1975, a permit for their wastewater discharge was not required since vinyl chloride was not considered a toxic or hazardous waste.

JPH:ceg
cc: John Welsch

HRC 001 1478

RUBBER CORPORATION OF AMERICA

SALES OFFICES / MANUFACTURING PLANTS / RESEARCH LABORATORIES

NEW SOUTH ROAD / HICKSVILLE, NEW YORK 11802 / PHONE (516) 931-8100

July 21, 1964
GSE-95-4-JMC-JMC

Nassau County Department of Health
Water Pollution Control Section
Nassau County Office Building
Old Country Road and County Seat Drive
Mineola, New York

Attention: Mr. Francis J. Flood, Jr. P. E.
Associate Public Health Engineer

Dear Sir:

I am returning your form San. #117, filled out as far as possible, with apologies for the delay.

If any further information is required, please be sure to let me know.

Sincerely yours,

RUBBER CORPORATION OF AMERICA

Joel M. Cherry, Project Engineer
General Services Division
Engineering Department

JMC/erm
Enclosure

HRC 001 1480

Form San 117 (Rev. 12/63)

NEW YORK STATE DEPARTMENT OF HEALTH

INDUSTRIAL WATER USE AND WASTE WATER DISPOSAL PRACTICES SURVEY

1. Name of Establishment RUBBER CORPORATION OF AMERICA

2. Mailing Address NEW SOUTH ROAD HICKSVILLE NEW YORK

3. Plant Address SAME

4. Location of Plant SAME City, town, or village (circle) NASSAU County

5. Number of employees 175 Average 225 Maximum

6. Months Plant Operated (circle) J F M A M J J A S O N D

7. Number of days plant operated per week 6 Normal 7 Peak

8. Number of hours plant operated per day 24 Normal 24 Peak

9. Manufacturing Process or service Polyvinyl Chloride Resin, IRS Synthetic Latex, Plasticizers, and Plastic Product Production

10.

Raw Materials	Quantities	Primary Products	Quantities
1 Butadiene Monomer	38,000 #/wk	IRS	68,000 #/wk
2 Styrene Monomer	30,000 #/wk	Latices	
3 Vinyl Chloride Monomer	300,000#/wk	PVC	300,000 #/wk

11. Water Sources

	Gallons per day average	Gallons per day maximum
a. Public Water Supply (Municipal or Private) Name of Water Supply Co. Hicksville Water District	15,000	Est. 150% = 22,500
b. Plant's surface water intake (rivers, lakes, etc.) Name of river, lake, etc. _____ Location of intake _____	_____	_____
c. Plant's ground water source (wells, springs, etc.)	68,400	Est. 150% = 102,600
d. Other sources of water (quarries, mines, etc.) Name and location _____	_____	_____

12. Source of Aux. Fire Protection Water Storage Tank and Fire Pump and Hydrant System.

13. Briefly describe treatment of incoming water by your company and indicate whether or not water is treated for reuse Well Water is chlorinated, Process Water (city water) is demineralized.

(over please)

HRC 001 1481

14. Incoming water analysis performed by plant is not on a routine basis Frequency ____________

15. Water Use and Recirculation

Purpose of Water Intake	Water Use Gallons per day Average	Maximum	Water Recirculation Gallons per day Average	Maximum
Potable	1,000 est.	1,500 est.	0	
Process	5,000 est.	7,500 est.	0	
Cooling CITY WATER	9,000 est.	13,500 est		
Cooling WELLS	68,400 est.	102,600 est.	0	
Other COOLING TOWER	no meter 1,000,000 GPD		All recirculated-closed system	

	Type of Waste	Process A	Process B	Process C	Cooling Water	Sanitary Sewerage	Total Plant Waste
17.	Origin of Wastes	PVC	LATEX	LATEX CONCENTRATION		Sanitary	Over All Plant
18.	Description of Waste	PVC resin (inert) trace resin soaps	HCL Clear water	Clear	Heated	Sanitary	
19.	Average Volume of Waste Water, gallons/day	2,000 est.	3,000 est.	500 GPD est	77,400	1,000	82,900
20.	Waste treated yes or no (If yes, answer question #22	Settling pit	coagulated with alum.-- settling pit	same as process B	no	no	
21.	Where waste water is discharged:						
	To Sewers Name of Municipality	---	---	---	---	---	---
	To Local Watercourse Name of River/Lake	SEPARATE RECHARGE BASINS ARE USED FOR THE VARIOUS WASTES AND FOR COOLING WATER.				Leaching pools	
	To Land incl. ground water (Describe)						
	Other (Describe)						

(The printed number 16. stands beside the "Type of Waste" header row.)

22. Briefly describe waste water treatment by types of waste (Question No. 20) ____________
Use additional sheets for supplementary information and sketches

Waste process water is run to concrete (floor and walls) settling pits. Solids are dropped out and clear effluent is discharged to our recharge basins. The sand bottoms of these basins are changed yearly.

23. If discharge is to watercourse, give location of discharge ____________

24. Waste Water analysis performed by plant is not on a routine basis Frequency ____________

91

(Continued)

Sheet 2

25. Indicate any future water requirements We contemplate using additional public supply of water to replace our well water supply. Approximate use is 30,000,000 gallons per year based on present usage.

26. Remarks ______________________________

____

Name Joel M. Cherry Telephone Number WEl1s 1-8100 ext. 42

Title Project Engineer Date July 22, 1964

Do not write below this line--to be completed by Health Authority

Drainage Basin ______________ Topo Map Name ______________ Map No. ______

Name of Survey ______________ Local Health Office ______________

Receiving Waters:

Surface (1) ______________ Index ______________

(2) ______________ Index ______________

Ground (1) ______________ Mileage Coordinates ______________

(2) ______________ Mileage Coordinates ______________

Material Prepared for Counsel
Michael Whiteman, Esq.

hooker
RUCO

INTER-OFFICE MEMORANDUM

To: Michael Whiteman

Copies to:
H. Dubec
J. Ruffing
A. Lindsay
J. B. Harrison
P. DeVries
R. A. Katherine
A. Katona

File Ref.: RJA-354-bb
Date: June 28, 1979
From: Raymond J. Abramowitz
Div./Dept.: RUCO/Administration
Location: Burlington

Subject: NYS Department of Environmental Conservation - Information Dossier, 6-23-78 (Mr. A. Machlin)

At our meeting earlier this week, you requrested that we comment on the various contaminants mentioned in the referenced document.

The following table lists each chemical appearing in the DEC document and indicates whether our Hicksville plant used or manufactured the material and whether it could have appeared in any of our discharges, based on our best information. Commentary is then included for each material that we used or manufactured.

RJA
Technical Director

attachments

FORM NO. 50-050

HRC 001 1485

	Used or Manufactured	Discharged
Benzene	No	No
Bromodichloroethane	No	No
Bromoform	No	No
Carbon Tetrachloride	No	No
Chloroethyl Ethyl Ether	No	No
Chloroform	No	No
Chloromethyl Ethyl Ether	No	No
Dibutoxy Ethoxy Methane	No	No
Dibutyl Phthalate	Yes	Yes
Dichloroethylene	No	No
Dimethyl Naphthalene	No	No
Dioctyl Phthalate	Yes	Yes
Ethyl Toluene	No	No
Fluorene	No	No
Methyl Chloride	No	No
Methyl Naphthalene	No	No
Naphthalene	No	No
Pentachloropropane	No	No
Phenols	Yes	Yes
Tetrachloroethylene	Yes	Yes
Toluene	Yes	No
1,1,1 Trichloroethane	Yes	No
Trichloroethylene	Yes	Yes
Trifluorotrichloroethane	No	No
Vinyl Chloride	Yes	Yes

DIBUTYL PHTHALATE - This product was manufactured in limited quantities in the 1950's and early 1960's and it is estimated that trace quantities were possibly discharged with our water of esterification based on the solubility in water reported to be 0.04%.

DIOCTYL PHTHALATE - Plasticizer was manufactured in the 1950's and 1960's and it is estimated that trace quantities were possibly discharged with our water of esterification based on the solubility in water reported to be 0.01%.

PHENOLS - From 1956 through 1973, we purchased our vinyl chloride monomer inhibited with small quantities of phenol, in the low parts per million range. It is conceivable that traces of phenol could have survived our processing and been discharged with our PVC process water, but the quantities would necessarily have been infinitesimal.

TETRACHLOROETHYLENE - As stated in our testimony, this product, also known as perchloroethylene, was used in our esterification process and the annual discharge rate until 1975 was estimated to be less than 40 pounds per year. This stream has been incinerated on-site since 1975.

TOLUENE - Used as a solvent in some of our polyurethane coatings, but not discharged in any of our effluents.

1,1,1 TRICHLOROETHANE - Was temporarily used in limited quantities in some of our specialty polyurethane coatings, but not discharged in any of our effluents.

TRICHLOROETHYLENE - Until 1975, this material was reacted into some of our PVC resins and it is possible that trace amounts were discharged in our waste water to the lagoons. The amounts discharged, however, had to be minute since most of the product was consumed in the polymerization process. Assuming that all of our resin production employed trichloroethylene, the maximum usage could have been 12,000 gallons per year. Actual usage was significantly less than this, on average.

VINYL CHLORIDE - This material was covered thoroughly in our recent testimony. Vinyl chloride monomer, from 1956 to 1975, was present in our effluent from the PVC plant at levels less than 3 parts per million. However, our best information based on EPA documents indicates that most, if not all, of these traces of vinyl chloride in our effluent were dissipated into the atmosphere and did not enter the ground waters.

Whiteman
Ray AB

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